DOCUMENT RESUME

ED 034 366 40 EC 004 752

TITLE	An Experimental Study of the Clinical Acquisition of Behavioral Principles by Videotape Self-Confrontation. Final Report.
INSTITUTION	Denver Univ., Colo.
SPONS AGENCY	Office of Education (DHEW), Washington, D.C. Bureau of Education for the Handicapped.
BUREAU NO	BR-7-1319
PUB DATE	Jun 69
GRANT	OEG-8-071319-2814
NOTE	91p.
EDRS PRICE	EDRS Price MF-$0.50 HC-$4.65
DESCRIPTORS	Behavior Change, Evaluation Methods, *Exceptional Child Research, Feedback, Reinforcement, *Self Evaluation, *Speech Therapists, Student Attitudes, Student Evaluation, Teacher Education, *Video Tape Recordings

ABSTRACT

To determine the effect of videotape self-confrontation as a training device for speech clinicians, 30 students participated in a 12 month study. Ten experimental subjects were assigned to single confrontation, 10 to double confrontation, and 10 were control subjects. Each confrontation subject used a therapy matrix and scored his therapy session as he observed it. Each double confrontation subject was videotaped while completing the same process; he then watched himself watching himself. The student was able to study the sequence of events and the responses of himself and his clients. There was little difference between the single and double confrontation for most students, but for those with relatively poor self concepts significant shifts were made toward higher self esteem in double confrontation. A significant decrease in the number of negative reinforcements used in therapy was noted but there was no difference in the number of positive reinforcements used by the experimental subjects. Tables of findings, implications for the future, and appendixes are included. (Author/JM)

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BR-7-1319
OE/BEH

ED034366

EC004752E

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AN EXPERIMENTAL STUDY OF THE CLINICAL ACQUISITION OF BEHAVIORAL PRINCIPLES BY VIDEOTAPE SELF-CONFRONTATION

Daniel R. Boone, Ph. D., Co-Director
Speech and Hearing Center
University of Denver
Denver, Colorado 80210

Alvin A. Goldberg, Ph. D., Co-Director
Speech Department
University of Denver
Denver, Colorado 80210

June 15, 1969

U. S. Department of
Health, Education, and Welfare

Division of Research
Bureau of Education for the Handicapped
Office of Education

BEH-4071

ED034366

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Daniel R. Boone, Ph. D., Co-Director
Alvin A. Goldberg, Ph. D., Co-Director

University of Denver
Denver, Colorado

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The research reported herein was performed pursuant to grant with the Office of Education, U. S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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SUMMARY

Thirty students in clinical speech pathology training at the University of Denver participated for 12 months in a videotape self-confrontation study. The study measured the effects of videotape confrontation on a number of dependent variables to determine how effectively subjects could acquire and use behavioral methodologies in their therapy sessions. The specific hypotheses of the study were:

1. Videotape self-confrontation procedures coupled with principles of behavioral therapy are feasible and practical methodologies for training communication and communication disorder specialists.

2. Self-confrontation procedures differ significantly from more traditional training approaches in their effects on the development of clinical skills.

3. Single and double self-confrontation procedures differ significantly from each other in their effects on the development of clinical skills.

All subjects, 20 experimental and 10 control, were tested on the same dependent measures before the project began and after it was completed. Ten of the experimental subjects were assigned to a single confrontation condition and 10 subjects were assigned to double confrontation condition. In single confrontation, each subject was instructed to use a therapy matrix and to score his therapy session as he observed it. Each subject in the double confrontation session was videotaped while he observed and scored his therapy session. He then watched himself watching himself. The overall results of the investigation indicated that videotape confrontation was a powerful clinical training device. Of primary value was the development of the therapy matrix scale which provides both the trainer and the clinical trainee with a methodology for studying the clinical process and determining two persons' effects on one another. By use of the therapy matrix it was possible for the trainee to study the sequence of therapy events and the response effects of both himself and his client. The matrix, when used with videotape confrontation, was found to be most effective as a clinical training experience. While for the average student clinician, there was little difference in effects between single and double confrontation, the double confrontation experience was found to be most effective with clinicians who had relatively poor self-concepts. After double confrontation several of these subjects made dramatic shifts toward developing higher self-esteem. Experimental subjects made a significant shift in decreasing their number of negative reinforcements in therapy, but there was no difference in the number of times they would employ positive reinforcement. Apparently, the positive reinforcments that people use are fairly stable and somewhat resistant to change.

The research findings as well as conference discussions with the experimental subjects indicated that videotape confrontation is a powerful clinical training device. By demonstrating the positive effects of videotape self-confrontation, this investigation supports the validity of feedback theory and emphasizes the importance of feedback in the learning process. There is good reason to believe that the VTR self-confrontation procedures developed in this investigation enhance the training of teachers, clinical psychologists, social workers, medical students, management personnel and many other groups.

INTRODUCTION

The education of speech clinicians is a major responsibility of most academic programs in speech pathology. Nevertheless, scientific studies of clinical training methods are relatively rare. This report represents one of the few systematic inquiries ever conducted into the effectiveness of a specific approach to the training of speech therapists. The purpose of the study was to examine a particular training methodology that involves the use of videotape recordings (VTRs). The methodology is generally referred to in the literature as self-confrontation. Specifically, the study involved both the development of practical VTR self-confrontation procedures that could be used efficiently and routinely in the training of speech clinicians and the testing of these procedures experimentally to determine their relative effectiveness.

The clinical training program designed for this investigation emphasized the acquisition of behavioral principles and related therapeutic skills. Early in the development of self-confrontation procedures for this study, it became apparent that it would not be enough merely to confront the trainees with videotape playbacks of their clinical sessions. It was assumed that clinical practicum and self-confrontation experiences would be more likely to have an influence on the subsequent behavior of the subjects if they had a theoretical framework or set of principles to guide them in their role as clinicians and to help them classify, discuss, and interpret what they saw on videotape. The principles of instrumental or operant conditioning seemed to be highly appropriate for this purpose. It was felt that a classification scheme based upon operant principles would enable subjects to see the more subtle aspects of their behavior and client response, and it would assist them in recognizing changes in their own conduct over time. It was also believed that a knowledge of operant conditioning would help the subjects decide how best to modify or improve their performance as clinicians.

Feedback is an important aspect, as Barnlund (1968) has pointed out, of all self-regulating or goal seeking systems "whether they are mechanical devices, living organisms, or social groups". Three elements are essential to the feedback process: (1) information about a system's present characteristics; (2) a recognition of the discrepancy between the system's present state and its intended level of performance; and (3) a modification of the system's future performance to reduce the discrepancy between the actual and the ideal. The concept of feedback provides a framework for theorizing about the use of VTR self-confrontation in clinical training. By means of videotape playback, trainees can be confronted with accurate information about their performance as clinicians. They can compare the feedback they receive about their performance with their own ideal, the reactions of their supervisor, and the performance that would be appropriate in terms of their understanding of behavioral principles. The feedback model suggests that the information trainees obtain by comparing their actual behavior with their intended behavior would cause them to modify their future actions as clinicians in a manner that would reduce the discrepancy.

Theoretically, this modification should result in an improvement in their performance as clinicians and in other behavioral changes.

The experimental phase of the present investigation was designed to determine the value in training communication disorder specialists of VTR self-confrontation feedback methods. The study tested the following hypotheses:

1. Videotape self-confrontation procedures coupled with principles of behavioral conditioning are feasible and practical methodologies for training communication disorder specialists.

2. Self-confrontation procedures differ significantly from more traditional training approaches in their effects on the development of clinical skills.

A third hypothesis dealt with double confrontation. Feedback theory suggests that if individuals are given information about their past performance, they are likely to attempt to reduce the discrepancy in the future between their actual and their intended behavior. If this is so, the effectiveness of VTR self-confrontation might conceivably be enhanced by confronting individuals not only with a playback of their past performance but with their own reactions to themselves as well. That is, if an individual sees himself seeing himself, he could become more aware of the discrepancy between how he behaved and how he felt about it, and this greater awareness might facilitate the learning or change process. A double self-confrontation procedure was developed to determine the effects of observing oneself observing oneself and the following hypothesis was tested:

3. Single and double self-confrontation procedures differ significantly from each other in their effects on the development of clinical skills.

RELATED RESEARCH:

In a sense, individuals "look at themselves" regularly without the aid of videotape or other equipment. Gottschalk and Auerbach (1966) have pointed out that as early as 1934, Sterba commented on the importance of observing oneself when he theorized that during psychoanalytic therapy the ego bifurcates into an experiencing ego and an observing ego. According to Sterba, the observing ego helps a person understand the meaning of his experience. Anna Freud (1946) also believed that self-observation was an important ego function. More recently, Miller, Isaacs, and Haggard (1965) suggested that internal self-observation is a necessary prerequisite for self-insight.

It has been pointed out that when an individual observes himself, not through self-reflection but by actually listening to or viewing a mechanical reproduction of his performance, the process is referred to as self-confrontation. Relatively few studies have been reported that deal directly with the effects of self-confrontation. In his review of the literature, Eachus (1965) concluded that most elaborate investigation of the methodology was conducted by Nielsen (1962). In Nielsen's study, each subject watched himself during the playback of a filmed interview in which he defended his personal philosophy in the presence of an interviewer who deliberately challenged it. On the basis of observations, tape recordings, and films, Nielsen reported that self-confrontation forced subjects to revise self-concepts, often causing them to modify behavior. While the Nielsen study was extensive and systematic, it was not experimental, nor did it provide much insight into the effectiveness of self-confrontation as an educational tool.

Stoller (1950) used closed-circuit television and videotape to study self-confrontation in a clinical setting. Group therapy sessions of mental patients with chronic disturbances were videotaped, and each patient was given the opportunity to view the tape. Stoller concluded that the combination of group therapy and self-confrontation resulted in a significant improvement in patient communication and physical appearance. Stoller's findings are impressive, but his failure to use controls make them highly tentative.

Moore, Chervell, and Maxwell (1964) videotaped a series of interviews with 80 psychotic patients. Half of the patients were given an opportunity to view themselves on TV monitor immediately following each interview. The other half served as controls. The patients who confronted themselves showed significantly more improvement than those who did not. A later study by Moore, Chervell, and West (1965) also demonstrated that VTR self-confrontation was helpful in the treatment of psychotics. Boyd and Sisney (1967) predicted on the basis of dissonance theory that VTR self-confrontation would produce a change in the self-concept of psychotic patients. Research by Danet (1968) into the use of VTR self-confrontation with psychiatric patients was less encouraging. Danet found that a combination of self-confrontation and group therapy produced more negative self-evaluations than group therapy alone.

Haines and Eachus (1965) conducted an experiment to test the relative effectiveness of self-confrontation in training U. S. Air Force military advisors in cross-cultural interaction skills. The group whose skills were taught by self-confrontation techniques were compared with a control group whose members were taught by means of verbal coaching after a role-playing scene. According to Haines and Eachus, their study "...confirmed the effectiveness of self-confrontation as a training technique for the rapid acquisition of complex and subtle skills of interaction." The Haines and Eachus study was one of the first carefully controlled experimental investigations into the effects of self-confrontation as a training device. The investigation demonstrated the feasibility of self-confrontation research.

VTR self-confrontation has been used in the training of counselors. Walz and Johnson (1963) reported that counseling trainees responded differently to anxiety measures after self-confrontation, though the differences were not analyzed statistically because of a small sample size.

Ivey, Normington, Miller, Morrill, and Haase (1968) used a VTR self-confrontation procedure in connection with a micro-counseling training approach. In micro-counseling a traineee concentrates on just one aspect of the counseling process during a five minute session with an actor playing the role of the client. Ivey and his associates found that VTR self-confrontation resulted in a significant shift in base rates on three different skills: attending behavior, reflection of feeling, and summarization of feeling.

Videotape self-confrontation methods for training counselors have been described by Buchheimer et. al. (1965) and Poling (1965). VTR self-confrontation has also been used in speech training. Frandsen, Larson, and Knapp (1967) compared various self-confrontation procedures in a public speaking course. They found that students and instructors agreed more often in their evaluation of a student's speaking performance when a videotape playback was followed by the instructor's evaluation. Hirshfeld (1966) used videotaped speeches to compare the speech ratings of experts and students. She concluded that students were fairly accurate judges of a speaker's performance. Dieger, Crane, and Brown (1968) studied the effects of VTR self-confrontation on the self-concept of students in a general speech course. They hypothesized that self-viewing would cause a student to develop an actual congruent with the perceptions others had of him. The researchers also felt that self-confrontation would make the student less reliant on external sources of self-evaluation. These hypotheses were only partially supported. Students in the self-confrontation condition developed a more realistic self-concept than the controls but no significant difference was found between control and experimental groups, either in self-ratings and observer ratings or in locus of evaluation shift. Dieger, Crane, and Brown felt that self-confrontation might have had a stronger impact if the students could have participated in some form of self-analysis during the self-viewing experience instead of merely viewing themselves passively.

McCroskey and Lashbrook (1968) found that VTR self-confrontation in a public speaking course had a negative effect when students' speeches were merely videotaped and played back with no criticism. However, self-confrontation made a positive contribution when the videotape playback focused on the audience, as well as the student speaker, and when it was accompanied by both student and instructor criticism and discussion.

Studies in the area of stimulated recall are indirectly related to the phenomenon of self-confrontation. In stimulated recall research, subjects are presented with audiotape, videotape, or film playbacks of their behavior to help them remember and report the thoughts and feelings they experienced in the recorded situation. Bloom (1950, 1953, 1963), Bloom and Broder (1950), Siegel, Siegel, Capretta, Jones and Berkowitz (1963) and Siegel and Siegel (1964) found this type of confrontation quite effective in stimulating accurate recall. To date, the stimulated recall technique has been used to evaluate or assess classroom procedures and small group interaction, but not as a teaching device. Kagan and Krathwol (1968) used videotape for stimulated recall research with counseling trainees. No controls were employed in the study. The experimental subjects did not change significantly as a result of the experience.

Indirect support for the value of VTR self-confrontation is provided by Miller (1962) and Ward and Bendak (1964) who found that photographic self-images had a significant influence on the behavior of psychiatric patients.

Research by Goldberg (1960) indicated that individuals are likely to benefit more from self-evaluation than from evaluations by an external source. Since videotape permits an individual to observe and judge his own behavior, Goldberg's findings lend support to videotape self-confrontation procedures. Similar support of an indirect nature is provided by Myers, Myers, Goldberg and Welch (1969) who found that systematic feedback of a sociometric nature had a significant effect on the improvement in sensitivity of participants in a laboratory training workshop.

The language laboratory is a form of self-confrontation that has been used extensively and successfully in the teaching of foreign languages. Laboratory technique consists of having students tape record and then listen to their foreign language performance, (Carroll, 1963; Borglus, 1958; Borglum and Mueller, 1956; Hoge, 1959). Peckrel, Neidt, and Gibson (1958) found that the language laboratory made it possible for the instructor without training in a particular language to teach that language effectively.

A procedure for using VTR self-confrontation in marital counseling has been reported by Alger and Hogan (1967).

Research in the area of verbal conditioning lends further support to the supposition that behavior can be modified through social reinforcement. Extensive reviews of the verbal conditioning literature can be found in Greenspoon (1959), Krasner (1958, 1962, and 1965) and Williams (1954).

Although television has been used in clinical speech training programs (Aronson and Irwin, 1960; Wood, 1965; O'Neill and Peterson, 1964; Diedrich, 1966; Clifford, 1968), little if any research has been reported dealing with the effects of videotape self-confrontation in the preparation of speech clinicians. Although there is little in the way of quantitative research in the clinical training area, the speech pathology literature contains worthwhile articles on therapeutic procedures (Jakobovitz, 1966), therapy programs (Ruben, et. al., 1967), specialized training methods (Holland and Matthews, 1963), and therapy processes (Cooper, 1968). In 1967, the entire December issue of Asha was devoted to the problem of clinical supervision. In this issue, Miner identified general problems associated with the training of therapists in clinical skills; Prather supported client oriented supervision as opposed to clinician oriented supervision, and Kunze recommended behavioral recordings as an aid in evaluating therapy procedures. Kunze felt that unlike impressionistic reactions, behavioral recordings can preserve data, allow for the direct comparison of non-contiguous sequences, prevent the distortion that can occur when too much emphasis is placed on vivid but isolated events, and reduce observer bias.

In 1964, Halfond urged those involved in the training of clinicians not to downgrade the role of the supervisor. A year later, Van Riper (1965) recommended a supervisory system that involves a number of major and minor conferences between supervisor and trainee.

An elaborate description of training needs and techniques was provided by Ward and Webster (1965a and 1965b). Ward and Webster suggested that a trainee's needs and anxieties could inhibit his progress. They stressed the importance of giving a student clinician insight into his behavior as a therapist so he can modify his performance and experiment with new behaviors.

Ingram and Stunden (1967) conducted one of the few published research studies in the clinical training area. The two investigators demonstrated that training in speech therapy can result in statistically significant changes in a trainee's responses to such words as: teaching, rapport, helpful, acceptance, motivation, empathy, feelings, and communication.

In a discussion of behavioral principles and speech therapy, Holland (1967) suggested that the success of some clinical techniques can be explained in behavioral terms; that is, such principles as reinforcement and shaping can be viewed as ways of employing behavioral approaches in clinical settings. The present investigation examined the usefulness of behavioral principles in the training of clinicians.

Instrumental or operant conditioning refers to learning in which the organism is reinforced for emitting certain predetermined responses. Reinforcement may consist of reward, non-reward, or punishment. In those cases where it is desired that the organism emit a particular response that it is capable of making but which is not in its behavior repertory, response is "shaped" into the repertory.

Recent application of operant conditioning techniques in psychological therapy situations suggests that such techniques provide a powerful method for modifying behavior. The origin of these techniques in experimental psychology date back to Thorndike's early work (1911) on trial-and-error learning in animals. However, the most recent and relevant laboratory work in instrumental conditioning has been conducted by Skinner (1938, 1953, 1961). Working primarily with rats and pigeons, Skinner has developed a research environment (the Skinner Box), a behavioral unit (response frequency), and a reinforcement system which provides the framework for instrumental conditioning (Ferster and Skinner, 1957; Skinner, 1938). These techniques have been successfully applied in the development and use of teaching machines and programmed instruction (Holland and Skinner, 1961; Skinner, 1954, 1958, 1961).

The first contemporary study reporting the use of instrumental conditioning in a therapy setting was published by Skinner, et. al. (1954) who placed psychotic patients in what amounted to a human-sized Skinner Box (a room containing vending machine equipment designed and programmed to dispense reinforcers such as candy and gum when handles on the machines were depressed). Patients who responded by operating the equipment in order to gain rewards would, in this manner, be brought back into contact with their environment. Early findings indicated that high, steady response rates could be established in patients who previously had shown little inclination to interact with their environment. Subsequent studies using similar settings have been reported by Ferster and DyMeyer (1962); King, Armitage and Tilton (1960); and Lindsley(1965).

The cost of vending, recording, and programming equipment in the above cited studies was very great. However, subsequent investigators have found that effective behavior modification through instrumental conditioning can occur without the use of complex, expensive equipment.

The literature contains some dramatic examples of the effects of instrumental conditioning. Working with two hospitalized psychotics who had been mute for 19 years and 14 years respectively, Isaacs, Thomas, and Goldiamond (1960) were able to reinstate verbal behavior in six weeks by using chewing gum as reward reinforcement. One patient was first rewarded for merely looking at the gum, next for making lip movements, then for making sounds, and finally for repeating the word "gum". The second was originally given gum for joining a therapy group, and finally for participating in group interaction.

Bachrach, Erwin and Mohn (1965), treating a psychotic patient whose weight had declined to 47 pounds because she refused to eat, were able to reinstate eating behavior by using conversation as a social reinforcement. When they discovered, however, that the patient was vomiting after each eating, they made the reward contingent upon weight gain instead of simply eating. The vomiting ceased and was followed by a steady gain in weight and ultimately, the patient was released.

It has been pointed out that VTR self-confrontation can be viewed as a feedback process. A number of studies dealing with feedback in interpersonal situations provide some indirect support for the belief that VTR self-confrontation is of value in a training program. Leavitt and Mueller (1951) for example, found that the accuracy of their subjects in performing a task was superior in a "free feedback" condition than in conditions of more limited or "zero feedback". Research by Stolz and Tannenbaum (1963)and by Goldberg (1960) supports the value of positive feedback as opposed to feedback that consists of negative judgments. However, Howard and Berkowitz (1958)found that subjects wanted feedback that was reliable more than they wanted feedback that was positive and inaccurate. The value of accurate feedback is also supported by the Myers, Goldberg, and Welch (1969) research referred to earlier. According to Barnlund (1968), "Adequate feedback, both positive and negative, apparently contributes to the learning of new skills, the development of insight, and the improvement of interpersonal relations". (p. 231).

METHODS

This videotape confrontation project was conceived by the investigators out of a desire to improve clinical training programs for student speech pathologists.* The study was conducted at the University of Denver Speech and Hearing Center. In the Center there are about 40 student clinicians at any one time actively involved in providing clinical speech service. The clinical training provided these students consists largely of lecture, demonstrations, and supervised practice. It was the hope of the investigators that by using VTR self-confrontation, the students' overall clinical training program could be greatly enhanced.

The present project was devised as a supplementary training experience to be utilized in the already existing clinical training program and clinical facilities at the University of Denver. The experimental design using videotape confrontation was developed consistent with the number of students available in clinical training and the type of supervision already used, and within the limitations imposed by an antiquated, obsolete clinical facility.

* An Experimental Study of the Clinical Acquisition of Behavioral Principles of Videotape Self-Confrontation, supported by the Bureau of Education for the Handicapped, Office of Education.

It was proposed in this research project that subjects would observe videotape playbacks of their behavior as clinicians. It was felt that this self-confrontation experience would have a double effect on the student clinician: (1) it would help him better understand himself and (2) it would provide him with feedback relative to the effectiveness of his employment of behavioral methodologies in his clinical sessions. In order to accomplish the experimental tasks, the project was divided into two distinct phases: Phase I and Phase II which will be discussed separately.

Phase I

The co-investigators, Daniel R. Boone and Alvin A. Goldberg, initiated the project on March 18, 1968. Since much of the early phases of the project required detailed development of questionnaire forms, test instruments, and subject orientation materials, immediate efforts were given to hiring a project secretary, Mrs. Jane Clark. Arrangements were then completed by adding two research assistants to the project, Mr. Ernest Stech, who represented communication methodology, and Mr. Thomas Prescott, who represented the area of speech pathology. Both of these graduate research assistants began working half time (20 hours a week) during the initial phase of the project. A consulting behavioral psychologist, Mr. Harold Mansfield, was added to the staff shortly after the project began. Arrangements were also made with an additional consultant, Mr. Noel Jordan, who agreed to serve the project as a television advisor. Once personnel were hired, the project developed in these distinct areas: acquisition of equipment and development of facility; construction of instruments and appropriate questionnaires; development of operant instructions and demonstrations; and selection of five trainees to serve as pilot subjects during the Summer months, 1968.

Acquisition of Equipment and Development of Facility.

Although tentative arrangements had been made with a local television supplier in Denver, a considerable lag in the arrival of all of the equipment delayed the initiation of the experimental phase of the project. The following items of equipment were obtained and utilized in this project: (1) Two Ampex VR 7000 Videotape Recorders. (2) One Vidicon Camera, GE, with a Angenieux zoom lens, mounted on a camera dollie. Since only one taping was scheduled at any one time, sometimes coupled with a taping playback on the other recorder during double self-confrontation, only one camera was needed for the project. (3) Two television monitors were used. One was a 23 inch Setchel Carlson monitor which the subjects used to observe their own playback; the second monitor was a 9 inch Magnavox used exclusively as a taping monitor. (4) Other clerical pieces of equipment (typewriter rental, storage cabinets, etc.) were added to the project office as required to facilitate total project needs.

Two offices, each approximately 11' x 11', were converted for exclusive project use. The experimental room was outfitted with the large television playback monitor, a child's table with two small chairs, and a large table with two adult size chairs. A single microphone was attached to the ceiling. The room was also equipped with two mirrors on opposite walls which could be utilized appropriately for double confrontation conditions. On the wall of the experimenter's office adjacent to the experimental room was a one-way mirror allowing the television camera to "shoot" its pictures without overtly interfering with the subjects or their clients. In the experimenter's office, the two videotape recorders were housed on their appropriate platforms. The project camera was mounted on its dollie so it could film through the open viewing port, constructed especially for this project. One corner of the room was devoted to the secretarial aspects of the project including a desk and chair. Two other chairs were placed in the office for project personnel.

Construction of Test Instruments and Appropriate Questionnaires.

Most measuring devices employed in the present investigation were designed specifically to meet the needs of this project. The following instruments were used during the project:

(a) The Chicago Q-Sort,(Dymond and Rogers, 1954). The Chicago Q-Sort was designed to measure changes in self-acceptance. This was the only instrument used which was not developed by the investigators specifically for this project. Pre-to-post changes in the Chicago Q-Sort scores between control and experimental groups were compared. A copy of the Chicago Q-Sort may be found in Appendix A.

(b) The Denver Q-Sort. The investigators developed a 120 item Q-Sort as presented in Appendix B. Each subject was asked to sort the Denver Q-Sort twice, to reflect his "actual" behavior as a clinician and second to reflect his "ideal". All control and experimental subjects were administered the Denver Q-Sort at the beginning and at the end of the study.

(c) A Self-Perception Questionnaire. A questionnaire of the semantic differential type, see Appendix C, was developed by the investigators to determine how each experimental subject felt about himself after observing himself on videotape. It asked the subjects to rate particular qualities such as "pleasant-unpleasant"; "friendly-unfriendly" on an eight point scale. The self-perception questionnaire was tested and modified during the pilot phase of the study.

(d) Self-Confrontation Questionnaire. In addition to the self-perception questionnaire, a questionnaire was developed which measured how each experimental subject reacted to his self-confrontation experience. Particular emphasis was given to having the subject make a judgment relative to his clinical effectiveness with his client. The self-confrontation questionnaire was administered immediately after a single confrontation experience.

(e) Double Self-Confrontation Questionnaire. A double self-confrontation questionnaire was developed for those experimental subjects who were in double self-confrontation conditions. Peculiar to this questionnaire were questions asking the subject to respond to having viewed himself viewing himself (double confrontation). Both the single and the double confrontation questionnaires were eventually replaced in the project by the Confrontation Session Rating Scale, which may be found in Appendix D.

(f) Self-Evaluation of Clinical Competence Rating Scale. Each subject after viewing himself was asked to complete a small six item rating scale evaluating his own clinical session. A nine point rating scale was used for this self-scoring of one's own therapy. (see Appendix E).

(g) Speech Category System. To help the subjects develop an awareness of what went on in their therapy sessions, the investigators constructed a Therapy Category System, which in the beginning included 14 observable categories of things that "could go on in therapy". Eventually, this category system was revised so that it contained only 10 categories. Whatever happened in a therapy session could be classified under one of the 10 categories. The category system permitted the clinician to score his own videotaped therapy enabling him to see how a client responded to his directions, suggestions, rewards, and punishments.

A manual for the Speech Therapy Category System for scoring video and audio tape was developed by Ernest L. Stech. The manual was given to all subjects who participated in the experimental phase of the project. A feature of the self-scoring method was the therapy matrix scale which enables both a clinician and his supervisor to obtain an immediate visual configuration of what happened within a particular therapy session. The matrix served as a visual "write-out", providing each subject with direct insight into how he gives directions and suggestions and how he rewards or punishes in therapy. (The reader who is interested in more detailed information about the self-scoring system and the therapy matrices may read about them in some detail in the scoring manual found in Appendix F).

(h) Subject Data. Besides the dependent measures that were developed, further information was obtained on each subject. For example, senior faculty members were asked to rate each subject relative to his academic, experimental, and clinical competency. Each subject's Minnesota Multiphasic Personality Inventory (MMPI) scores were available as well as his Verbal-Quantitative scores on the Graduate Record Examination. These data were used to compare a subject's personal characteristics with his performances on various dependent measures.

Development of Operant Instructions and Demonstrations.

While much staff effort was focused on the development of single and double confrontation videotape methodologies, emphasis was given also to the formulation of methods for instructing subjects in the use of behavioral principles in therapy. It was decided that experimental subjects should receive some exposure to behavioral training principles and demonstrations of operant conditioning before they began their active participation in the project. The project's consulting psychologist, Mr. Harold Mansfield, developed a ten page written monograph entitled "A Behavioral Approach to Speech Therapy". Each subject read the contents of this as part of his orientation. He also viewed a demonstration videotape consisting of a therapy session in which operant procedures were employed. It should be pointed out that behavioral orientation and overall emphasis was not to insist that subjects employ only operant procedures as therapists. Instead, it was the hope that the student clinicians would develop an awareness of the powerful shaping potential each clinician has with his particular client. To complete the orientation, the therapy scoring matrix developed by Stech was introduced to each experimental subject and he was instructed in its use.

The Pilot Study with Five Trainees.

After the project staff had developed some competency using the videotape equipment for single and double confrontation experiences, the pilot project was ready to begin. Initial drafts of the dependent measures were tested on the pilot subjects. Most of the measures underwent some revision after the pilot phase of the project was completed. Five graduate students who were in their final quarter of their Master's degree program in speech pathology served as pilot subjects. Each of these students had been assigned a case load by the clinic director which included clients of various ages with such problems as articulation, voice, stuttering, and language disorders. Every subject was also assigned a clinical supervisor. The videotape self-confrontation experience each student received was supplementary to his regular supervision.

The subjects began the pilot project by watching ten videotape lectures on operant conditioning. They were then administered a battery of tests, including the Denver Q-Sort, the Chicago Q-Sort, and Self-Perception Questionnaire. For a period of seven weeks, every subject was taped twice weekly with various clients. A schedule was developed which gave each subject the opportunity for both single and double confrontation. A typical confrontation experience was as follows: the subject's 30 minute session with a client was videotaped; immediately after the clinical experience the subject would select what he felt to be the most relevant five minute period within the session; a playback of this five minute period was viewed by the subject and a project trainer. Initially the trainer randomly selected a five minute segment of the therapy session for viewing. However, this often resulted in the replay of irrelevant events. Ultimately, the staff discovered that the most effective approach for confrontation was to have the subject identify the segments themselves that contained worthwhile sessions.

During the playback, the tape was stopped, started, and occasionally re-run at the discretion of the student trainee and the trainer. The reactions of the trainee to the various confrontation experiences were systematically measured by the various instruments constructed for this purpose. After seven weeks each subject was again tested on the dependent measures. One of the project investigators then met individually with each subject and gave him feedback relative to his self-concept and his growth in using operant methodologies in therapy. The investigation also questioned each subject about his overall reaction to the project. An open-ended interview was conducted with each subject at the end of the pilot portion of the study. Reactions of the subjects to the experience and the data that were collected during Phase I helped shape the future experimental format of the investigation.

Phase II

The experimental phase of the project, Phase II, began in September, 1968, and ran through March 15, 1969. The test procedures developed in Phase I were utilized in Phase II. As the Fall Quarter began at the University of Denver in late September, 1968, some 40 student clinicians began their clinical practicum experience in the Speech and Hearing Center. By a process of random selection, 30 student trainees were assigned to the project by the clinical director. Each subject was assigned the normal caseload of clients with a supervisor for each clinician. Every subject was then randomly assigned to one of three conditions. Ten subjects were assigned to the control group and participated in no single or double VTR self-confrontation experience; ten subjects were assigned to the single confrontation experimental group; and ten were selected to participate in the double confrontation experimental group.

At the beginning of Phase II, all subjects were assembled by the project investigators and given their group assignments. Each subject, control and experimental, was given a series of tests: the Chicago Q-Sort, the Denver Q-Sort, and the Self-Perception Questionnaire. All control and experimental subjects were then asked to read the Mansfield paper on behavioral therapy. Following the reading of this paper, each student was given a demonstration of the use of operant procedures in the clinical practice of speech pathology, and a taping was made of each subject's therapy session for baseline measurements. At this point, the control subjects were dismissed and they did not participate again in the investigation until post tests were administered at the conclusion of the study.

The experimental subjects, both those in the single and double confrontation condition, were videotaped every other week throughout the Fall and Winter Quarters, 1968-69. Subjects viewed their therapy sessions immediately after the session or as soon thereafter as possible. A project trainer was always with a subject when he viewed himself. It was often necessary for the project office to devote as much as nine hours a day to taping and playback. Because of the equipment requirements for double confrontation, two videotape recorders had to be kept in good working condition at all times. Equipment problems were constant, requiring much scheduling and re-scheduling. By using loaner equipment, all subjects were able to maintain their taping and confrontation schedules.

The Videotape Self-Confrontation Procedures.

Each experimental subject was videotaped seven times in two quarters while engaged in therapy sessions. Taping was accomplished through a wall port in the therapy room. A one-way mirror could be placed over the port if the clinician wished to minimize distraction to the client or if it was felt the camera would arouse excessive anxiety in the client. Otherwise, the session was taped without the mirror.

The usual procedure in taping was to get as much of a close-up as possible of the therapist and client. With some clients, particularly children, this proved difficult at times because of the amount of postural shifting or moving around the room. Adult clients usually could be taped close-up more easily. Every effort was made to keep both client and clinician in view, but if a choice had to be made, the clinician was chosen. The training experience was oriented toward changing therapist behavior, not client behavior, and it was felt important to record the clinician's facial and gestural clues as well as the verbal interaction.

The Self-Confrontation Sessions.

Each experimental subject was exposed to seven self-confrontation sessions over a period of two academic quarters at the University of Denver. Half the subjects were given double VTR self-confrontation a total of seven times. The other half experienced seven single VTR self-confrontations.

The self-confrontation sessions consisted of three distinct segments. First, the subject viewed approximately five minutes of his own therapy session on TV monitor. As pointed out, the subject himself selected the segment that he wanted to observe. The subject scored the replay, using the Speech Therapy Category System discussed earlier. The tape was then rewound, then that subject viewed the same segment again, but without scoring it. Finally, the subject filled out a series of forms consisting of the Self-Perception Questionnaire, the Confrontation Session Rating Scale, and the Self-Evaluation of Clinical Competence Rating Scale. The two viewings are of major importance to the research reported here since they represent the basic VTR self-confrontation experience - the unique feedback that each experimental subject received about his performance as a therapist.

During the first five-minute viewing sequence, a trainer scored the tape along with the subject. The trainer consisted of the project's two research assistants, Mr. Thomas Prescott and Mr. Ernest Stech. Either the subject or the trainer could stop the playback at any time with a remote stop switch located within easy reach where the scoring was being performed. The therapist was instructed to stop the tape any time he got behind in the scoring or had a question about the categorizing procedure. The trainer stopped the tape whenever he felt he was getting behind in the scoring or felt that the therapist was behind or scoring incorrectly. During the first two or three sessions, the trainer and therapist added up the total number of acts to get a quick, rough reliability check. In addition, any noteworthy facets of the therapy segment were discussed, particularly unusual patterns of reinforcement or problems related to the control of client responses.

The second five-minute viewing was done without scoring. The therapist was instructed to stop the tape any time he felt a desire to discuss some aspect of the therapy session. Usually, discussion or comment centered around an interesting aspect of the therapy session or a problem which had become obvious through scoring or which was blatant or obvious without scoring. Some therapists did not stop the tape at all during the second viewing, and a few did not even comment after the second viewing.

It has been pointed out that all 20 experimental subjects were given the basic VTR self-confrontation experience. Ten of these 20 were, also, exposed to double self-confrontation. In this condition, the subject was taped while watching the therapy segment without scoring. The subject was then shown the tape of himself watching the therapy segment. At the end of the double self-confrontation experience the subject filled out the Double Self-Confrontation Questionnaire.

At the close of the six month training period all subjects, control and experimental, were re-tested using the previously described dependent measures. A specific protocol was developed for each experimental subject describing his overall characteristics as measured by various data, a description of his overall therapy as described by his accumulative therapy matrices, and his skill in the use of behavioral principles in therapy. Toward the end of the project, an individual conference was held with each student by one of the project directors in which the various data relevant to that particular trainee were discussed. Like the pilot subjects before them, positive and negative reactions were solicited during the final interview with the hope of better refining subsequent confrontation methodology.

FINDINGS AND ANALYSIS

The results of the project will be divided into two sections, those from Phase I and the detailed results of Phase II. Prior to the initiation of Phase I, procedures were developed which were reported in II, the Methods section of this report. Phase I, the pilot phase of this investigation,was conducted from June 17, 1968, through September 14, 1968.

Phase I

Five pilot subjects (Master's degree students who were in their final quarter of clinical training), were selected for the pilot project. Each subject was administered the previously described measures before the experiment began. Experimental conditions were the same for each subject, with each subject experiencing seven weeks (twice weekly) of both single and double videotape confrontation. Following these seven weeks of confrontation, the subjects were then tested again with the dependent measures.

The two Q-Sort instruments used in the pilot investigations provided information about each subject's actual and ideal self-concept as an individual and as a clinician before and after a series of self-confrontation experiences. In almost every instance, the correlation between actual and ideal sorts was higher after self-confrontation. This finding strongly suggested that the videotape self-confrontation had a measurable and positive effect on the pilot subjects. Prior to the pilot study, the two Q-Sort instruments were administered to two members of the communication disorder faculty at the University of Denver. It was found that in almost every instance, the actual and ideal sorts of the subjects became more similar to the sorts of the faculty "experts" after the subjects completed a period of videotape self-confrontation.

A self-perception semantic differential was administered before and after the videotape self-confrontation experience. A general trend of response was that subjects tended to evaluate themselves as "less good" after the first confrontation. A general improvement in self-concept occurred after the first session, although rating fluctuations occur, as seen in Figure 1.

The clinician's evaluation of the clinical stiuation was measured by questionnaires introduced in about the middle of the pilot investigation. There appeared to be a strong response-set in the rating. For example, one of the items was related to the adequacy of the room, furniture, lighting, etc. A large number of very negative responses could have been expected, since the rooms and furniture were poor and inadequate. Yet ten responses out of thirteen rated the situation as adequate to good. The response-set probably occurred as a result of the increasingly positive readings on the self-perception and evaluation questionnaires. The self-evaluation of the clinical situation was the last instrument given the subjects after each session and would be the most prone to response-set problems.

By use of videotape confrontation and behavioral analyses, it did appear that particular categories of therapy could be identified and analyzed by the behavioral categories matrix. Three observers categorized at least 20 minutes of videotape on each clinician's initial therapy session in the pilot study. Two of three observers categorized the clinician's final session. The analysis of the various data and the use of the behavioral category system in therapy identified these occasional clinical errors:

1. The clinician used positive reinforcement incorrectly early in a sequence or session.
2. There was excessive use of positive reinforcement in general and particularly after a client has acquired a new behavior.
3. Insufficient use of negative reinforcement occurred when it could be used.
4. There was excessive use of negative reinforcement resulting in the client no longer emitting any verbal behavior.
5. There was occasional ambiguous and inconsistent reinforcement behavior.
6. There was often ineffective eliciting of client behavior, as evidenced by excessively inappropriate or incorrect responses by the client.
7. There was ineffective control of the session as evidenced by excessive and inappropriate client responses accompanied by irrelevant clinician responses.
8. There was lack of any attempt to obtain client positive or negative self-reinforcement.
9. There was lack of differentiation in reinforcing specific behaviors of a behavior sequence and a client's progress in general.

During the course of data reduction, certain common features and trends became evident. Table 1 shows four separate measures for each clinician. The first column consists of the rank order correlation between initial and final sessions; the next column shows the variability in session to session of evaluation ratings; the next presents the item to item variability in ratings for the sessions evaluations; and the fourth column consists of the shift in the self-perception semantic differential readings from the first to final self-confrontation; finally, the fifth column shows the average rank order coefficient of correlation between observer categorizations for each clinician over two sessions.

Table 1

Gross Comparison of Five Self-Confrontation Measures

	Initial-Final Session Correlation	Rating Between Sessions	Variability Between Items	Self Perception Change	Average Inter-Observer Reliability
1.	.77*	88.5**	88.2**	+14***	.89*
2.	.94	96.4	91.4	.97	.97
3	.95	19.4	31.6	-1	.97
4.	.87	41.7	32.7	+37	.85
5.	.67	69.6	115.0	+36	.80

*Rank order Correlation
**Coefficient of Variability
***Rating Scale Units

It appeared that people who perceived and reported large changes in self-image and evaluations of events, also, exhibited a greater amount of variation in behavior over tow sessions when scored by external observers. Thus, internal and subjective report variability was related to behavioral variability. At first glance, the inter-observer reliability values correspond to the same trend; that is, clinicians who reported variability and change and whose behaviors varied also, exhibited the largest variability as determined through external observer categorization. This may have occurred because the behavior was less uniform and predictable within a session, and, therefore, more difficult to score. The clinician who used a highly consistent pattern of behavior provided an observer with an easier categorization task because sequences could be anticipated. If a clinician used several patterns of response, direction, and reinforcement, the observer could not predict as easily and was more subject to error.

Phase II

A myriad of diverse data were collected during the second phase of the project. For the convenience, however, of the reader the various measurements will be reported separately in this order: (1) Self-Confrontation Questionnaire; (2) Double Self-Confrontation Questionnaire; (3) Self-Perception Questionnaire; (4) Denver Q-Sort; (5) Chicago Q-Sort; (6) Behavior Matrix Analyses; and (7) Open-Ended Questionnaire at End of Project.

(1) Report of Single Self-Confrontation Questionnaire Responses.

A 14 item questionnaire was completed by all 20 experimental subjects at the end of each single self-confrontation session. Each nine-point scalar item was analyzed individually in order to assess responses to the self-confrontation experience.

The first question was, "How do you feel about this experience? How valuable was this experience as an aid to learning the practical aspects of therapy?" The trend was for the single self-confrontation group to begin seeing less value in the experience in the last two session while the double self-confrontation group seemed to have retained a positive evaluation over all seven sessions.

An analysis of variance was conducted on the ratings of the two groups for the seventh session to see if the difference was significant. The results are summarized in Table 2, which shows that the difference was significant at the 10% level.

Table 2

Analysis of Variance of Single and
Double Self-Confrontation Groups'
Responses on Question No. 1 of the
Single Self-Confrontation Questionnaire

	Sum of Squares	Mean Square	dF	F
Between Groups	5.00	5.00	1	3.63
Within Groups	24.80	1.38	18	
Total	29.80			

The second question was: "To what extent did you look and sound like yourself?" There was virtually no difference between the two experimental groups but both groups showed very consistently a trend over the seven sessions toward seeing their videotape image as closer to their expectations. An analysis of variance was conducted, comparing the first and seventh session ratings for all twenty experiemntal subjects. The results are summarized in Table 3 with the difference significant at the 10% level.

Table 3

Analysis of Variance of First and Seventh Session Responses of all Subjects on Question No. 2 of the Single Self-Confrontation Questionnaire

	Sum of Squares	Mean Squares	dF	F
Between Groups	6.40	6.40	1	3.29
Within Groups	21.50	1.94	18	
Total	27.90			

The next four items on the questionnaire asked the individual to evaluate his own therapy in terms of effectiveness in getting the client to respond in eliciting the desired behaviors, in positive reinforcement, and in negative reinforcment. In general, the subjects reported on the questionnaire items that they saw themselves improving most in the use of negative reinforcement, next in eliciting desired client behavior, and very little in getting client response or in the use of positive reinforcement. The amount of change in rating was inversely related to the initial level of the rating. The average initial rating for use of negative reinforcement was 4.6, the lowest rating of all four questions, but, as noted, the largest apparent improvement took place in this activity. The ability to elicit received an average initial rating of 3.1 and exhibited the next largest shift. In terms of getting client response and use of positive reinforcement, the average initial ratings were 2.78 and 2.68, and they showed no net shift from the first to the seventh sessions.

A trend analysis (Winer, 1962, p. 73) was performed on all the questionnaire items. Significant trends were obtained on Question 1 for the single self-confrontation subjects, on Question 2 for both experimental groups and on Question 3 for the double self-confrontation group.

On Question 1, ten single self-confrontation subjects show a significant linear trend ($F=8.5$, $p<.01$, $dF=1/63$) toward less value in the experience over the seven sessions. A non-significant quadratic F was obtained ($F=1.44$). For Question 2, both groups showed a significant increase in acceptance of the videotape image of self in therapy. The linear F was 5.6 ($p<.05$, $dF=1/63$) and the quadratic F was 0.56 and not significant for the single self-confrontation group. The double self-confrontation subjects produced a linear F of 15.0 ($p<.01$, $dF=1/63$) and a non= significant quadratic F of 2.7.

Question 6 requested clinician self-evaluation of the use of negative reinforcement. The double self-confrontation group produced a significant linear trend (F=9.82, $p<.01$, dF=1/63) and a non-significant quadratic trend (F= .14) toward more effective use of negative reinforcement. No other significant trends were found.

The relatively low self-evaluations on the use of negative reinforcement and high self-evaluation on positive reinforcment is quite interesting. Comments by the subjects during confrontation indicated that most of them had negative feelings about the use of negative reinforcement; that is, it was hard to reinforce a client negatively. On the other hand, it was easy to reinforce positively, probably too easy. This situation is illustrated in the behavioral measures. Positive reinforcement ratios range from 0% to 100% with a mean around 50%. It may be, therefore, that the therapists were evaluating their own effectiveness in terms of their feelings about the use of positive and negative reinforcement rather than in terms of the learning theorists' notions of partial reinforcement.

Questions 7 and 8 were phrased as follows: "To what extent were you open, warm, and friendly as opposed to cold, distant, and withdrawn with the client?" And, "To what extent were you directive and dominant as opposed to permissive and non-directive?" No significant differences between groups were evident, and both groups, on both questions, showed no net shift from first to seventh sessions even though there are fluctuations from session to session through the program. There was a slight tendency for the therapists to evaluate themselves as less friendly and less directive within each quarter, but this tendency is weak and ambiguous. In general, the therapists saw themselves as fairly directive and fairly friendly.

The final six questions were oriented more directly at the conventional ways of evaluating therapy. The therapists were asked to rate the material used in therapy, the room environment, the techniques used, the client's overall performance and progress, the level of fulfillment, and the therapist's own overall performance. A slight trend toward more positive ratings was shown for all the items except the room environment. All the ratings tended to converge on the "3" level on the scale. The differences between items were not large, although the materials used were rated most positively and the room environment most negatively. In general, the trends and the differences between them were smaller for these six items than for the evaluations of eliciting and reinforcement behavior.

(2) Report of Double Self-Confrontation Questionnaire Responses.

A four-item questionnaire was completed at the end of each double self-confrontation session. Each nine-point scalar item was analyzed individually in order to assess responses to the double self-confrontation experience.

The first question was: "How do you feel about this experience? How valuable was this experience as an aid to learning about yourself as a therapist?" The average responses for the ten double self-confrontation subjects and the ten single self-confrontation subjects are compared in Table 4. The same subject group tended to rate the double self-confrontation experience as less valuable than the single self-confrontation session. This is not an unexpected result, however. The single self-confrontation experience probably is more valuable in terms of direct utility in becoming a speech therapist. Secondly, double self-confrontation represents more of a metalearning situation and/or an interpersonal learning situation which is a much more subtle process than watching oneself performing therapy.

Table 4

A Comparison of Double Self-Confrontation Subject Responses to Question No.1 on both the Single and Double Self-Confrontation Questionnaire

	Session							
	1	2	3	4	5	6	7	Average
Single Self-Confrontation Questionnaire	1.60	1.80	1.50	1.80	1.30	1.70	1.60	1.61
Double Self-Confrontation Questionnaire	3.00	2.77	2.80	2.60	3.40	3.10	2.70	2.91

Examination of the individual responses to the double confrontation questionnaire showed that there was a large variation between subjects for the single and double self-confrontation ratings. The average ratings for each subject and the difference between the ratings for the single and double conditions are compared in Table 5. Almost 42% of the total difference is due to subject No. 16's ratings. Subjects12, 13, and 16 together account for 76% of the difference.

Table 5

A Comparison of Ratings of the Single
and Double Self-Confrontation Experience
by Individual Subjects.

Subject Number	Single Confrontation Rating	Double Confrontation Rating	Net Difference
11	2.143	2.857	0.714
12	1.286	3.429	2.143
13	1.714	4.286	2.572
14	1.000	1.167	.167
15	1.571	1.571	.000
16	1.000	7.142	6.142
17	1.000	1.000	.000
18	1.857	2.429	.572
19	2.286	3.000	.714
20	2.286	3.429	1.133

The second question asked the subject to rate the degree to which he looked and sounded like himself. Results are shown in Table 6. These data tend to indicate increasing acceptance of the videotape image of the self with succeeding exposure, and the rate of increase is larger than for the single self-confrontation sessions. Either the double self-confrontation process makes it easier to accept oneself as taped or else the lack of task orientation and task pressures during double self-confrontation affects the rating values.

Table 6

A Comparison of Double Self-
Confrontation Subject Responses
to Question No. 2 on both the
Single and Double Self-Confrontation
Questionnaires.

	Session						
	1	2	3	4	5	6	7
Single Self-Confrontation Questionnaire	2.60	2.10	2.00	1.70	1.70	1.60	1.60
Double Self-Confrontation Questionnaire	3.00	4.56	2.40	1.40	1.50	1.30	0.90
Difference	-0.40	-2.46	-0.40	0.30	0.20	0.30	0.70

Question No. 3 on the questionnaire asked the subject to rate himself on the degree of openness, flexibility, and honesty exhibited in the double self-confrontation situations. The data are presented in Table 7, and indicate a shift toward greater perceived openness. However, this question is extremely difficult to interpret because very little interaction occurred during some sessions so that there was little real opportunity to be open, flexible and honest. The responses to this question may reflect a general response set tendency to rate everything more positively as experience with self-confrontation goes on.

Table 7

The Double Self-Confrontation Subject Responses to Question No. 3* on the Double Self-Confrontation Questionnaire

Session						
1	2	3	4	5	6	7
2.80	2.67	2.10	2.20	2.50	2.10	1.90

* To what extent were you open, flexible, and honest as opposed to defensive, closed, and anxious during the self-confrontation?

The fourth question required the clinician to rate the degree of self-involvement in the self-confrontation experience as seen on the TV monitor. Table 8 summarized the ratings. Peak involvement seemed to occur at the third session which was the final session of the first quarter. Two interpretations of the trend in Table 8 can be put forth. One possibility is that "boredom" began to occur as the subjects became accustomed to the self-confrontation process. A second explanation is that "involvement" in this context is a measure of anxiety and emotional arousal and that later sessions are less anxiety-inducing than earlier sessions.

Table 8

The Double Self-Confrontation Subject Responses to Question No. 4* on the Double Self-Confrontation Questionnaire

Session						
1	2	3	4	5	6	7
2.00	2.56	1.50	2.80	2.20	2.70	2.60

* To what extent were you involved in the self-confrontation experience as opposed to uninvolved or withdrawn?

In summary, the double self-confrontation questionnaire showed that (1) the double self-confrontation was considered less useful than single self-confrontation in terms of learning to become a therapist, (2) a more rapid shift toward high acceptance of the videotape self-image occurred in double self-confrontation than in single self-confrontation for the same subjects, (3) subjects perceived themselves becoming more open as time went on, and (4) the degree of involvement increased toward the middle of the program and then decreased.

(3) Report of Self-Perception Questionnaire Results.

The semantic differential type of questionnaire completed at the end of each self-confrontation session provided an opportunity for each subject to evaluate himself on a global basis. A preliminary version of the instrument was completed before any of the self-confrontation sessions. The average self-perception scores for the initial questionnaire and the seven sessions are shown in Table 9 for the single self-confrontation and double self-confrontation groups.

Table 9

Self-Perception Scores for the Single and
Double Self-Confrontation Groups

Session	Single Self-Confrontation	Double Self-Confrontation
Pre	6.17	6.02
1	6.49	6.40
2	6.40	6.19
3	6.47	6.80
4	6.81	6.91
5	6.78	6.96
6	6.55	7.04
7	6.56	7.14

An analysis of variance was performed of the self-perception scores, the results of which are shown in Table 10. There was no significant difference between the groups for the seven sessions, namely because the between-session variance accounted for 92% of the total variance.

Table 10

Analysis of Variance Comparison of the Single and Double Self-Confrontation Groups.

	Sum of Squares	Mean Squares	dF	F
Between Groups	16.0958	16.0958	1	1.54
Within Groups	188.2608	10.455	18	
Total	204.3566			

A second analysis of variance was performed on scores consisting of the difference between the ratings given before confrontation and after the final videotape session. An F ratio of 4.36 was obtained, just short of the ratio required for significance at the 10% level. This finding tends to indicate that double self-confrontation results in a larger shift in self-perception in the positive direction single self-confrontation.

Analyses of variance were conducted on the first, fourth, and seventh session scores for both the single and double self-confrontation scores. A significant F would indicate a statistically significant shift in self-perception. The results are summarized in Table 11 and 12. Neither F is significant at the 5% level, although the F for the double self-confrontation group is significant at the 10% level.

Table 11

Analysis of Variance Comparison of the Single and Double Self-Confrontation Groups' Change Scores on the Self-Perception Questionnaire.

	Sum of Squares	Mean Square	dF	F
Between Groups	.6103	.3052	2	.36
Within Groups	14.2859	.5291	27	
Total	14.8962			

Table 12

Analysis of Variance Comparison of the
First, Fourth, and Seventh Sessions for
the Double Self-Confrontation Group

	Sum of Squares	Mean Square	dF	F
Between Groups	2.8391	1.4196	2	2.84
Within Groups	13.4978	.4999	27	
Total	16.3369			

There existed a rather large variation between subjects on the self-perception questionnaire. This variation indicated that individual differences might be masking the effect of confrontation. Since each subject was given the MMPI, it was possible to investigate this effect empirically. The subjects were ranked on the basis of their K-scale scores. The K-scale measures self-esteem, among other variables, as evidenced by a high positive correlation between self-ratings and K-scale scores. An analysis of variance showed that persons with low K-scale scores evaluated themselves less favorably on the self-perception instrument prior to self-confrontation. This result was significant at better than the 1% level. The analysis is summarized in Table 13.

Table 13

Analysis of Variance Comparison of
Low and High MMPI K-Scale Subjects
on Self-Perception Ratings

	Sum of Squares	Mean Square	dF	F
Between Groups	6.5488	6.5488	1	7.17
Within Groups	16.4398	.9133	18	
Total	22.9886			

The session-by-session self-perception scores for the high and low K-scale subjects are shown in the Table 14. No significant differences were found between high and low K-scale subjects in terms of self-perception scores, although there is a trend toward more change in the low K-scale and low self-esteem subjects. For all practical purposes, the high self-esteem subjects did not shift in self-perception over the course of the self-confrontation sequences.

Table 14

Self-Perception Scores for Subjects
Scoring Above and Below the Median
on the MMPI K-Scale

Session	Low K-Scale Group	High K-Scale Group
Pre	5.86	6.34
1	6.40	6.49
2	6.08	6.51
3	6.55	6.72
4	6.79	6.92
5	6.95	6.79
6	6.94	6.65
7	6.83	6.58

The findings on K-scale scores permitted a re-evaluation of the single and double self-confrontation. Table 15 shows the breakdown of low and high K-scale subjects and the single and double self-confrontation conditions. The difference between single and double self-confrontation is larger for the low K-scale subjects. No statistical tests could be applied to this breakdown due to the very small N's for the cells.

Table 15

Comparison of Average Change from
Preliminary Rating to Final Rating
for Single and Double Self-Confrontation
and Low and High K-Scale Subjects

	Single Self-Confrontation	Double Confrontation
Low K-Scale Subjects	0.380	1.825
High K-Scale Subjects	0.858	1.240

Although strong statistical significance is lacking in almost all the self-perception analyses, two conclusions can be drawn on a very tentative basis. First, there is weak evidence that double self-confrontation results in a larger shift in self-perception than does single self-confrontation. Second, there is somewhat stronger evidence that persons with low initial self-esteem are affected more by the self-confrontation than persons with high self-esteem, and that double confrontation is particularly effective for these people. These findings indicate that double self-confrontation can have an added effect above and beyond single confrontation and it is a procedure which is particularly effective with persons who have relatively low self-esteem.

(4 and 5) Results of the Chicago Q-Sort and the Denver Q-Sort

Two Q-Sort instruments, the Chicago Q-Sort and the Denver Q-Sort, were administered to the control and experimental subjects at the beginning and at the end of the experiment. Every subject was asked to sort both instruments twice during each administration. Once to indicate how he actually perceived himself (actual), and once to describe himself as he would ideally like to be (ideal). A copy of the Q-Sort items and the sorting instructions can be found in Appendix G and H. The instruments and instructions were given to the subjects in a random order.

The Chicago Q-Sort provided a measure of each subject's actual and ideal self-concept at the beginning and at the end of the study. The Denver Q-Sort measured each subject's perception of himself as a clinician and his conception of the ideal clinician before and after the investigation. Table 16 contains a summary of the Q-Sort data.

Table 16

Averages of the Correlations of Pre and Post Actual and Ideal Sorts for the Subjects in the Control, Single Confrontation, and Double Confrontation Conditions

Denver Q-Sort

	Correlation of Pre and Post Actual	Correlation of Pre and Post Ideal	Correlation of Actual and Ideal	
			Pre	Post
Control Group	.709	.688	.705	.825
Single	.694	.744	.670	.735
Double	.682	.740	.692	.707

Chicago Q-Sort

	Correlation of Pre and Post Actual	Correlation of Pre and Post Ideal	Correlation of Actual and Ideal	
			Pre	Post
Control Group	.727	.764	.699	.784
Single	.754	.809	.837	.892
Double	.766	.807	.771	.824

An analysis of variance was performed to determine if the change in the correlation between the actual self-concept and the ideal self-concept on the Chicago Q-Sort for the subjects in the control, single confrontation, and double confrontation conditions differed significantly. The results of this analysis are presented in Table 17. The analysis of variance resulted in an F of 1.11, which was not significant. As Table 16 indicates, the correlation between the subjects' actual self-concept and their ideal self-concept was higher at the end of their participation in the study than it was at the beginning, but the subjects in the control and experimental conditions did not differ significantly from each other with regard to the shift in the relationship between their actual self and ideal self.

Table 17

Analysis of Variance of the Pre to Post Change in the Relationship between Self-Concept and Ideal Self-Concept on the Chicago Q-Sort for the Control Group, the Single Confrontation Experimental Group, and the Double Confrontation Experimental Group

	Sum of Squares	Mean Square	dF	F
Between Groups	703.0	351.1	2	1.11*
Within Groups	5,430.8	246.2	22	
Total	6,133.8		24	

*Non-significant

An analysis of variance was performed to determine if the change in the correlation between the actual self-concept and the ideal self-concept on the Denver Q-Sort for the subjects in the control, single confrontation, and double confrontation conditions differed significantly. The results of this analysis are presented in Table 18. The analysis of variance resulted in an F of 19.3, which was significant at the 1% level of confidence.

Table 18

Analysis of Variance of the Pre to Post change in the Relationship between the Self-Concept and Ideal Self-Concept on the Denver Q-Sort for the Control Group, the Single Confrontation Experimental Group, and the Double Confrontation Experimental Group

	Sum of Squares	Mean Square	dF	F
Between Groups	766.2	383.1	2	19.3*
Within Groups	505.9	20.23	25	
Total	1,272.1		27	

*p. .01

The sign test was employed to determine the specific location of the differences on the Denver Q-Sort self-ideal relationship revealed by the analysis of variance.

It indicated that the single confrontation group differed significantly from the control group at the .05 level of significance. The difference between the double confrontation group and the control group was not significant (10% level). The significant difference on the Denver Q-Sort between the single confrontation group and the control group in the self-ideal relationship indicates that the self-confrontation experience inhibited self-ideal convergence. The control subjects did not reveal such inhibition. They behaved the way one would expect students in a clinical training program to behave. Over time, their actual self-concept as clinicians and their ideal self-concept became more similar. A sign test revealed that this shift was significant at the .01 level. The shift of the single and double confrontation subjects was not significant.

Why didn't the ideal-actual clinical self-concept of the experimental subjects converge as much as the actual and ideal of the controls did? The Denver Q-Sort findings can be interpreted in a number of ways. It is conceivable that student clinicians who periodically observe their own clinical performance on videotape are less likely than other students to delude themselves into believing that they have achieved their ideal just because they are nearing the end of their training. Self-confrontation makes them more realistic and objective about themselves. In addition, self-confrontation might have caused the experimental subjects to develop a clinical ideal that is more difficult to achieve than the control subjects' ideal.

The greater dissimilarity between the experimental subjects' actual and ideal sorts also suggests that they are more likely than the control subjects to continue learning and improving as clinicians in the future. They are possibly less complacent than the control subjects about their clinical ability and, perhaps, as a result of VTR self-confrontation, more aware of specific aspects of their clinical behavior that need improvement.

(6) Report of Behavior Matrix Analyses.

At the beginning of the self-confrontation project, the need for a way to watch the videotapes became apparent. That is, a viewpoint of frame of reference was required within which both clinical-trainee and the trainer could observe the therapy process. Since the project was oriented toward the acquisition of behavioral principles in speech therapy, a system oriented toward a learning theory conceptualization of the therapy process was developed.

A number of implications of the category system and its underlying model were explored prior to and during the self-confrontation phase of the project, but the principle focus, in terms of therapist change, was on the analysis of individual therapy sessions. The category system provided a useful form of information feedback transformation which allowed the therapist to evaluate and change his own behavior.

The Inter-Observer Reliability of the Category System.

Three observers categorized at least 20 minutes of videotape of initial therapy sessions in a pilot study. Two of the three observers also categorized all of the final sessions, and all of the scoring was done simultaneously insuring that the same video and audio levels were used and that the same segment of tape was scored. The resulting data were used to calculate inter-observer reliabilities using two different techniques. First, a rank order correlation (Spearman's Rho) was calculated on the category profile. Finally, a Pearson product-moment correlation was calculated for each category and for the total number of events scored. The rank order correlations are shown in Table 19.

Table 19

Rank-order Coefficients of Correlation as Estimates of the Reliability of the Category Scoring System

	Observer 1 - Observer 2	Observer 1 - Observer 3	Observer 2 - Observer 3
	.995	.958	.954
	.952	.888	.855
	.943	.988	.670
	.879	.785	.984
	.928		.961
	.979		
	.942		
	.978		
	.684		
Average =	.920	.904	.886

These correlations show the degree to which the observer tallies results in comparable rankings of the categories on frequency of occurrence. The reliability estimates from this procedure were consistently above .90 and are significant at the 1% level in 66% of the comparisons. This indicates a high degree of inter-observer reliability for category rank order. Since category rank-order was the most commonly used measure of behavior change in the research, the rank-order reliability was the most important one for use in evaluating the adequacy of the categorization process.

An improvement in the rank-order reliability occurred from the first five tapes to the last five. For the two observers who could be compared on this basis, the average coefficient of correlation increased from .90 to .93. This increase was probably due to learning effects since all the observers were just becoming familiar with the system during the pilot study and particularly while scoring the first few tapes. In this sense, the reliability values found were probably lower than would be obtained after much more practice and comparison of results.

The final reliability check consisted of calculating a product-moment correlation on the absolute value recorded by each observer in each category. The results are summarized in Table 20. A very low reliability was obtained on category 2 because one of the observers consistently omitted this category during early scoring. After the problem was detected, this observer began using Category 2 more frequently, and the reliability rose to .79.

Table 20

Product-Moment Coefficients of Correlation as Estimates of the Reliability of the Categories in the Scoring System

Type of Category	Category Number	Product-Moment Correlation	Average for Type of Category
Clinician	1	.779	.612
	2	.156*	
	3	.490	
	4	.901	
	5	.732	
Client	6	.954	.791
	7	.957	
	8	.515	
	9	.748	
	10	.780	
	All	.855	
	Average _r_=	.702	

* This reliability value was obtained as a result of one observer consistently omitting Category 2 from some early scoring. The reliability for Category 2 after the problem was discovered and corrected rose to .794. This change raises the average _r_ for clinician categories to .739. The overall average _r_ was raised to .765.

In summary, the use of rank order correlation values showed that the inter-observer reliability in terms of category ranks was quite good, on the average being above .90. A product-moment correlation estimate, which introduces the variability in number of acts recorded, gave an average reliability of .75. These reliability calculations provided some confidence in the usefulness of the category system and led to the decision to permit scoring by individual observers rather than teams in order to save time and effort.

Reliability of Scoring During Training.

Since the initial part of the scoring practice used a typed transcript, the reliability of categorization by the therapists could be and was calculated. One of the trained observers scored the transcript before the clinicians did so, and his results were used as the criterion against which all the transcript scoring was compared. Reliability values were computed with a rank order correlation (Spearman Rho) of the ten categories. The mean reliability was .58, and the median and mode were .61 and .62 respectively. These values represent an average reliability over the first 50 behavioral acts the clinicians had ever scored, indicating a fair amount of inherent reliability and good differentiation between categories in the system.

Rapid acquisition of the category system is important if the clinicians are to use it as a self-evaluation technique. Individual differences in learning the categories probably are due to variations in intelligence among other factors. This was tested by rank ordering the subject on various achievement and aptitude measures, correlating this rank order with that on scoring accuracy. Table 21 summarizes the results. GRE scores seem to be most highly related to category scoring system learning with the quantitative score being a slightly better potential predictor.

Table 21

The Relationship of Various Achievement
and Aptitude Scores to Initial Category
Scoring Accuracy

Achievement or Aptitude Measures	Correlation with Scoring Accuracy	
	13 MA Candidates	13 MA Candidates and 2 Ph. D. Candidates
GPA-Total Undergraduate	+.16	
GPA-Final Two Years	+.16	
GPA-In Major	+.32	
GRE-Verbal	+.42*	+.19
GRE-Quantitative	+.48*	+.17
GRE-V=Q	+.47*	+.32

*Significant at the 10% level

Behavior Changes in Therapy.

One of the assumed advantages of videotape self-confrontation procedures was that the therapist could see and hear his own behavior and could record and evaluate sequences of his own behavior for the purpose of changing. At the beginning of the project, the most likely targets of change seemed to be reinforcment patterns. Experimental evidence pointing to the efficacy of partial reinforcement, which, when combined with preliminary data showing rather high average positive reinforcement schedules in therapy, indicated a promising change goal. The induction of change was attemped by three different procedures: (1) a description of behavioral principles was written by the psychologist on the project and was given to each therapist at the beginning of the first quarter; (2) a brief discussion of problems observed generally in the first four weeks of videotaped therapy was duplicated and distributed to the therapists at the end of the first quarter; and (3) the two graduate research assistants who acted as supervisors in the self-confrontation experience discussed reinforcement types and patterns with the clinicians whenever appropriate.

A reduction in the frequency of positive reinforcement and an increase in the frequency of negative reinforcement was expected because of the attempted behavior changes. The positive reinforcement ratio was found by taking the total number of correct client responses and finding the percentage followed by positive reinforcements. The negative reinforcement ratio was found by taking the total number of incorrect client responses and finding the percentage followed by negative reinforcements. In addition to the reinforcement schedules, three other behavior measures were calculated. The percentage of correct responses out of the total of correct and incorrect responses by the client was calculated and called the correct response ratio. Similarly, the percentage of inappropriate responses out of the total of correct, incorrect, and inappropriate responses was termed the inappropriate response ratio. Finally, the number of times client self-reinforcement was used as a percentage of all client and clinician behavior in the session was called the self-reinforcement ratio.

The five measures varied in their stability. The positive reinforcement ratio and the correct response ratio tend to be stable measures because they are devised from behavior which constitute 20% to 40% of the total client-clinician interaction. The negative reinforcement ratio varies widely and a part of this variation is due to the small number of incorrect client responses in some therapy sessions. For example, some half hour sessions involve only five incorrect client responses so that the differences between one or two negative reinforcements is a variation from 20% to 40% negative reinforcement frequency. The same situation applies to the inappropriate responses and the self-reinforcement ratios. Change comparisons were made by scoring at least 20 minutes of each clinicians' first and last taped therapy sessions. Scoring was done by one or both of the graduate research assistants on the project using the behavior category system.

Chi Square analyses were performed on the distribution of positive reinforcements. The number of subjects using reinforcement ratios above and below a 50% level are compared, as shown in Table 22. There was a significant shift toward the use of lower position reinforcement ratios at the .05 significance level.

Table 22

Chi Square Analysis of Experimental Group
Shift in Positive Reinforcement Ratios

	Before Experience	After Experience
Above 50% Reinforcement Ratio	5	12
Below 50% Reinforcement Ratio	15	8

($x^2=4.9$, $p < .05$ with dF=1)

A similar analysis was conducted on the use of positive reinforcement by control group subjects. A non-significant shift occurred in the direction opposite that of the experimental group and opposite that of the intended treatment. The data are summarized in Table 23.

Table 23

Chi Square Analysis of Control Group
Shift in Positive Reinforcement Ratio

	Before Experience	After Experience
Above 50% Reinforcement Ratio	4	2
Below 50% Reinforcement Ratio	6	8

($x^2=0.4$, N.S. with dF=1)

Because the before exposure distribution was in the same direction as the after exposure distribution, the data were recast in the form shown in Table 24. The Chi Square value was slightly high, but remained non-significant.

Table 24

Alternate Chi Square Analysis of Control Group Shift in Positive Reinforcement

	Before Exposure	After Exposure
Above 65% Reinforcement Ratio	8	5
Below 65% Reinforcement Ratio	2	5

($x^2=1.8$, $p < .20$ with dF=1)

The analysis of change in negative reinforcement also utilized Chi Square tables, the data being shown in Table 25 for the experimental and control groups respectively. No significant shift was found.

Table 25

Chi Square Analysis of Experimental Group Shift in Negative Reinforcement

	Before Treatment	After Treatment
Above 40% Negative Reinforcement Ratio	8	12
Below 40% Negative Reinforcement Ratio	12	8

($x^2=1.6$, N. S. with dF=1)

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Chi Square Analysis of Control Group Shift in Negative Reinforcement

	Before Treatment	After Treatment
Above 40% Negative Reinforcement Ratio	6	4
Below 40% Negative Reinforcement Ratio	4	6

($x^2=0.8$, N. S. with dF=1)

An explanation for these results can be obtained from an inspection of the negative reinforcement ratio distributions shown in Table 26. The most striking shift in the experimental groups is the reduction in variability of negative reinforcement ratios. Sixteen of the subjects range from 15% to 60% negative reinforcement after exposure to the videotape program. Before this experience, the 16 subjects closest to the center of the distribution ranged from 5% to 75%.

Table 26

Distribution of Negative Reinforcement
Ratios Before and After Treatment

	Experimental Group		Control Group	
	Initial	Final	Initial	Final
.00 - .09	4			2
.10 - .19	3	1		0
.20 - .29	4	3	2	2
.30 - .39	1	4	1	1
.40 - .49	3	3	2	1
.50 - .59	1	4	2	1
.60 - .69	1	1	0	1
.70 - .79	2		0	2
.80 - .89			1	
.90 - .99	1	4	2	

Statistical analysis of the data is complicated by the four subjects who used 100% reinforcement schedules after treatment. These subjects' scores give the data high variance and eliminate the possibility of statistical significance. It is interesting to note that the control group tended to shift in a direction opposite to that induced in the confrontation subjects and that the control group range remained the same for the initial and final sessions.

A second type of analysis was performed on the positive and negative reinforcement data, an analysis which provides additional insight into the behavior changes induced during the videotape experience. The distributions of positive and negative reinforcement ratios were compared before and after treatment for both the control and experimental groups. The results are summarized in Table 25. The positive and negative reinforcement ratios were different (significant at the .01 level) in the experimental groups. The distributions of these ratios in the control group were not significantly different. When control and experimental subjects were combined, there was still a significant tendency (at the .05 level) to have higher positive reinforcement ratios than negative. After treatment, the experimental group reinforcement ratios were similar.

The control group distributions became significantly different (at the .05 level) after treatment. The combined experimental and control groups showed no significant difference or similarity in the reinforcement ratio distributions after treatment.

A more detailed treatment of the relationship of positive to negative reinforcement appeared warranted, based on the preceding analyses. Therefore, scattergrams of the positive versus negative reinforcement ratios were prepared by plotting the two ratios for each experimental subject before and after treatment. A relationship was found before treatment, as shown in Table 27. A coefficient of contingency (Siegel, 1956, 196-202) of .38 significant at the 10% level, was obtained, indicating that clinicians who exhibited relatively high positive reinforcement ratios also tended to exhibit high negative reinforcement ratios and vice versa. The scattergram indicated that the relationship was non-linear, and more detailed analyses, planned for in subsequent data reduction, should show an even stronger relationship.

Table 27

Coefficient of Contingency and Chi Square Analysis of Relationship of Positive to Negative Reinforcement Before Videotape Self-Confrontation

		Negative Reinforcement Ratio	
		Above Median	Below Median
Positive Reinforcement Ratio	Above Median	7	3
	Below Median	3	7

(x^2=3.2, $p < 10$ with 1 dF,
Coefficient of Contingency =.38)

After exposure to the videotape program, no relationship of the two reinforcement ratios was found as shown in Table 28. The contingency coefficient was .14 and was not significant. This result can be explained by reference to the findings reported above. If people increased their use of negative reinforcement and decreased their use of positive reinforcement, the clinicians with the lowest negative and highest positive reinforcement ratios initially would tend to change to the greatest extent, and the change would tend to decrease the relationship.

Table 28

Coefficient of Contingency and Chi Square Analysis of Relationship of Positive to Negative Reinforcement After Videotape Self-Confrontation

		Negative Reinforcement Ratio	
		Above Median	Below Median
Positive Reinforcement Ratio	Above Median	6	4
	Below Median	4	6

($x^2=0.4$, $p<.10$ with 1 dF, Coefficient of Contingency=.14)

As noted previously, three behavior measures were used besides the reinforcement ratios. Of these three, the number of client self-reinforcements was found to be relatively useless, mainly because many of the clients were incapable of self-reinforcement. The ratio of correct responses to all correct and incorrect responses provided insights into the characteristics of therapy sessions even though it did not provide a measure of change. The same held true for the percentage of inappropriate responses in the total of correct, incorrect, and inappropriate client behaviors. The distributions of the positive-negative ratios are shown in Table 29. This appears to reflect a difference in kinds of clients rather than a difference in clinicians. There are clients who consistently give a high number of clearly correct responses; for example, one aphasic client and one voice client each exhibited this tendency. Few clients, for example, several hearing impaired and several emotionally disturbed children, tended to respond inappropriately at a far higher rate than most other clients. These findings suggest that a behavior category system may be useful as an empirical tool in classifying clients and also that such client variables should be taken into account in any future research on clinician training.

Table 29

Chi Square Analysis of the Difference Between the Positive and Negative Reinforcement Ratio Distributions Before and After Treatment for the Experimental Groups

	Positive Reinforcement Ratio	Negative Reinforcement Ratio
Number of Subjects Above 50% Ratio	16	5
Number of Subjects Below 50% Ratio	5	15

($x^2=10.0$, $p < .005$, with dF=1)

	Positive Reinforcement Ratio	Negative Reinforcement Ratio
Number of Subjects Above 50% Ratio	12	11
Number of Subjects Below 50% Ratio	8	9

($x^2=0.10$, non-significant, with dF=1)

(7) Responses of Open-Ended Questionnaire at End of Project.

At the end of the experimental phase of the project, all experimental subjects were scheduled for an individual interpretation conference. Prior to this conference, each subject was asked to complete an open-ended questionnaire specific to his videotape confrontation experiences. Each subject was asked these three questions: What did you like most about the videotape confrontation experience? What did you like least about the videotape confrontation experience? Any additional comments?

The subjects'comments were utilized in the interpretation conference. Also, for each subject he was given feedback specific to the kind of reinforcement he used in his initial therapy sessions as opposed to those scored in his final therapy sessions. Positive-negative, correct response, inappropriate response, self-reinforcement ratios were computed and discussed with each subject. His individual Q-sort results were tested relative to his consistency of sort between self and ideal, both initially and at the final stages of the project for the Denver Q-Sorts and the Chicago Q-Sorts. For the various correlation coefficients obtained, interpretation was given to each subject relative to the meaning of these correlations with some discussion given to how the particular subject related to project results as a whole.

What most subjects liked best about the confrontation was the opportunity to see objectively the effectiveness of the clinician in his therapy session. As one student stated, he was able to observe himself as a "third person" enabling him to look critically at what he was doing. Most all of the questionnaire respondents felt that by studying videotape, dissecting a particular segment of one's therapy, that one could fully appreciate the dramatic effect of reinforcement on the behavior of his client as well as on himself. Perhaps this quotation from one of the subject's questionnaire states a consensus of subject opinion:

"I liked the opportunity to actually see and hear myself. Supervisors can explain what you are doing correctly and incorrectly, but it becomes much clearer when you actually observe it yourself. It is valuable to be able to sit and observe the client's reactions after the session when your mind is free from the actual lesson and observation can be concentrated on. The experience made me a lot more aware of the types of reinforcement that I was giving and how the client was receiving them. Sometimes I found that too much direct reinforcement was being given and I would not have realized it if I had not confronted,"

There were very few negative evaluations from the confrontation experience. The general interpretation of the subjects toward improving the confrontation experience would be that they would be taped with more than one client, and that they would have been allowed to study more than a particular five minute segment from their various therapy sessions. Most all subjects wished they could have had a more intensive single and double confrontation experience. A few of the subjects said that in the beginning they disliked seeing themselves and hearing themselves so critically; on subsequent sessions, however, they were able to concentrate less on their own appearance and more on the effectiveness of what they were doing. Some subjects complained that double confrontation was somewhat dull and that more could be done to question the subject during double confrontation. One subject felt that the Q-sort requirements were far too long and involved and because of this he felt his sorts were invalid and unreliable. (In reality he had very high correlations between his pre and post sorts).

It would appear from our conference discussions with various experimental subjects that videotape confrontation is a most effective clinical training device. It made the investigators desirous of using such procedures in the "real world" free of the experimental limitations imposed by this kind of project. That is, for certain subjects it would have been helpful in their training program to have had a more intensive exposure to videotape confrontation. Because of the need for a relatively large sample,the subjects were not allowed to tape themselves as frequently as we might have desired from a training point of view. Several of our subjects felt that the videotape confrontation experience was perhaps the most valuable part of their graduate training program.

CONCLUSIONS

While there are obvious advantages in employing videotape as a clinical training device, such as demonstrating a tape playback of a particular case, this project developed a methodology in using videotape in a way quite different from any previously reported study. A major advantage of videotape over film is its usability in normal lighting conditions and its immediate playback capability, permitting detailed auditory and visual analysis of an immediately previous event. Such a medium allows the trainer-trainee (clinical-education-industrial) the opportunity for a detailed dissection of a previous situation, permitting the trainee to study himself as a "third person" viewer, either alone or with his trainer.

This opportunity for detailed analysis of a previously completed event, such as a speech therapy session,attracted the attention of the investigators as a potentially powerful mechanism for studying clinical processes in speech therapy. The obvious advantages of employing such a self-evaluation method in the training of graduate speech clinicians prompted the initiation of this particular project. The purpose of the project was to develop a methodology for using videotape as a confrontation training device for clinicians, with some emphasis given to the acquisition of behavioral principles and their employment in the developing clinician's therapy. The overwhelming conclusion of all participating students and staff was that videotape self-confrontation proved itself immediately to be one of the most exciting, powerful training devices that each had ever experienced. Because the project was initiated as an experimental project, the results must be evaluated primarily by the data collected, consistent with the design of the study. The obvious need to use videotape confrontation more intensively with some subjects who seemed to need a more intensive experience had to be ignored, so that all experimental and control subjects received the prescribed exposure required by the project design. The investigators have found great clinical validity in using videotape confrontation. While the overall project data are highly significant in favor of videotape confrontation as a clinical training device, these data represent only a most conservative validation of the use of such confrontation. After a second year study, further developing methodologies and studying effects, the investigators are anxious to use the developed system practically in the clinical training of speech pathologists and audiologists, as well as applying the system to other training groups, (teachers, clinical psychologists, counselors, social workers, medical students, etc.).

Specific Project Implications

A review of the FINDINGS AND ANALYSIS section of this report presents the reader with a detailed amount of data which has been organized specific to the measures used. Although it is possible to extract the conclusions of the study from viewing directly the data and their statistical meanings, we shall summarize briefly the findings of the study and its implications in direct response to each of the three project hypotheses:

Hypothesis #1, Videotape self-confrontation procedures coupled with principles of behavioral therapy are feasible and practical methodologies for training communication and communication disorder specialists.

A speech therapy session lends itself well for videotaping of the entire session. The student clinician was given the opportunity of selecting five minute segments of his therapy for videotape confrontation analysis. Under conditions of either single or double confrontation, the subject was able to view his therapy critically with or without a trainer. With the development of a therapy category system, it was found that subjects could learn to use the category system when viewing themselves with a high level of reliability. Videotape confrontation procedures were easily taught to all experimental subjects, suggesting easy applicability of procedures in other training settings. The therapy category system helped the student become aware of his interactions with various clients, looking at reinforcement patterns of both himself and his client. No attempt was made in the study to encourage particular reinforcement patterns, (such as always giving a reward for an appropriate response or perhaps varying the schedule of reinforcement), but rather to help the student become aware of his particular response patterns in therapy. The category system helped the trainers and the trainees to identify quickly and reliably particular patterns of therapy, such as identifying the talkative clincian or the client who only repeats a behavior when it is quickly and strongly reinforced. The quickness of all experimental subjects to learn both the self-confrontation procedures and the therapy category system suggests that videotape confrontation is a feasible and practical method of training speech pathologists.

Experimental subjects differed from control subjects significantly at the end of the project relative to less use of positive reinforcement in therapy, relying more on negative reinforcement and the use of neutral-social responses. There were no significant changes in the overall employment of positive reinforcement by the clinicians in both the control and the experimental groups; the investigators predicted that the number of positive reinforcements would diminish some among those trainees who experienced single or double confrontation. It would appear that all subjects' baseline use of positive reinforcement stays at about the same level while negative reinforcement patterns significantly dropped only for the experimental confrontation subjects. It would appear from our experience using videotape confrontation that the trainee who studies his own therapy develops an awareness of behavioral principles (operants, contingencies, schedules, etc.) and applies these principles in his therapy by his own viewing, requiring little or no direction or instruction from his trainer.

Hypothesis #2, Self-confrontation procedures differ significantly from more traditional training approaches in their effects on the development of clinical skills.

Videotape single or double confrontation appears to provide an excellent method for the clinician to become aware of himself and aware of the relative effectiveness of what he does in therapy. It would appear that such awareness of self and of therapy effectiveness would accelerate the clinician's acquisition of clinical skills. It appears that self-confrontation through videotape permits the student clinician the opportunity to observe and judge his own behavior and makes it less necessary for him to rely on the judgments of others when attempting to assess his own abilities or rate of progress. Clinicians in this study seem to thrive on their own self-evaluations after they became accustomed to viewing themselves critically; in the early stages of confrontation, most subjects were temporarily overly critical of self and of therapy performance.

In reviewing the Chicago Q-Sorts it appears that the subjects included in the study changed their self-concept only slightly in the direction of a self-ideal convergence. The Denver Q-Sort, a clinical measure, appeared to be a sensitive measure of a subject's perception of himself as a clinician before and after self-confrontation. The results of this analysis indicated that the self-confrontation experience inhibited self-ideal convergence. It is conceivable that self-confrontation reveals to an individual descrepancies between himself as a clinician and his ideal of which he was previously not aware. Self-confrontation results in a more realistic and objective self-awareness relative to a person's clinical skills. These findings suggest that persons who undergo self-confrontation are more likely than those who do not, to continue learning and improving as clinicians because they are possibly more aware of the specific aspects of their clinical abilities that need improvement.

Since all subjects, control and experimental, worked with all kinds of clients of varying ages and problems, it was not possible to use client response (improvement in client) as a measure of the efficacy of single or double confrontation. It should be pointed out that all control and experimental subjects received the same kind of didactic training, the same kind of clinic experience and supervision, except for the VTR self-confrontation experience given to the experimental subjects. It could be argued, however, that the effectiveness of the VTR self-confrontation could best be determined by closely measuring client responses to the various clinicians. Despite the obvious difficulties of finding a clinical population homogeneous enough to permit comparisons in client responses, efforts might well be directed to this question in future investigations. Because of lack of client homogeneity, using client response as a measure of clinical training effectiveness was not possible in this investigation.

Hypothesis #3, Single and double self-confrontation procedures differ significantly from each other in their effects on the development of clinical skills.

It would appear that both single confrontation and double confrontation are effective in developing self-concepts of clinicians and in helping them become aware of and employ various behavioral principles in therapy. Although there were but few statistical differences between the two approaches, subjects who received only single confrontation experiences found it to be less valuable than those who received double confrontation. Double confrontation appeared particularly effective with those subjects in the beginning who seemed to have a generally lower level of self-esteem than other subjects; these low self-esteem subjects showed dramatic shifts towards developing higher self-esteem after several sessions of double confrontation. Another value of double confrontation is that it maintained higher interest in project participation than did single confrontation.

It would appear that in actual application of either single or double videotape confrontation that trainers would use single confrontation more often than double because of the relatively simple demands of equipment. Single confrontation requires only one videotape recorder while double confrontation requires the simultaneous use of two videotape recorders. From an equipment point of view, single confrontation is a much simpler procedure. However, for those student clinicians who have relatively poor self-concepts or who show temporary problems in therapy, double confrontation appears as a more effective procedure. We might think eventually, therefore, of reserving the use of videotape double confrontation for those situations where a powerful confrontation experience is required. A related comment might also be that subjects be scheduled more intensively for videotape confrontation than every other week as our project subjects were scheduled. Our pilot subjects who were scheduled twice weekly for taping and confrontation appeared to profit more strongly and quickly than our 20 experimental subjects who were taped and confronted on an every other week schedule. Practical application of videotape confrontation might well include both single and double confrontation experiences on, at least, a once weekly schedule.

Beyond this Project Implications

Videotape single and double confrontation have been found to be excellent methodologies for the development of clinical skills in speech pathologists. Other disciplines might obviously profit from these same methodologies. For example, football coaches have for some time used the filming of practice and actual games for "stop-start" film analyses of what happened, looking for particular causes and effect. Videotape, with its obvious stop-start feature, has obvious utility for studying interpersonal cause and effects in any communication situation.

Practical Implications.

Although the present investigation concentrated on the efficacy of VTR self-confrontation in the preparation of speech clinicians, a review of the initial proposal would reveal that the study was deliberately designed to generate insights that would go far beyond the boundaries of the speech clinic in their implications. To broaden the potential relevancy of the research, the study was given a strong theoretical base. In addition, a methodology was selected for investigation - VTR confrontation - that can be used for a wide variety of educational and training purposes. Hence, it seems appropriate at this point to speculate about some of the wider implications of the present findings.

Perhaps one of the more important contributions of the study is the evidence it provides in support of VTR self-confrontation as a learning methodology. VTR self-confrontation is an alternative to the lecture and to laboratory and practicum experiences. The lecture is a reasonably effective way of communicating information and laboratory experiences help students develop particular skills. The findings of the present investigation suggest that VTR self-confrontation can stimulate a self-awareness that facilitates learning on both cognitive and affective levels.

VTR self-confrontation is a methodology that meets many of the newer criteria that are being used to evaluate educational procedures. It satisfies, for example, the requirements that the learner be actively involved in the learning process, it is likely to meet with the approval of those who insist that the educational process be more relevant and that educators should focus on the particular needs of each student, and it is compatible with the inductive approaches to learning that are receiving so much attention today, such as discussion and laboratory training. In addition to satisfying some of the newer standards on which educational approaches are judged, the present study indicates that VTR self-confrontation "works"; that it has the potential to actually help students change in positive ways.

What are some of the specific areas other than clinical speech training where the VTR self-confrontation approaches developed and tested in this study might be used? It could be employed to prepare students in many of the traditional and more modern specialties identified with the speech communication disciplines such as public speaking, debate, discussion, group communication, interpersonal communication, sensitivity training, interviewing, and the like. It could be helpful in clinical training curricula outside the speech pathology area including programs in clinical psychology, vocational rehabilitation, counseling, psychological testing, and psychodrama.

VTR self-confrontation methods could improve the training of teachers, social workers, and administrators. It could help students prepare for careers in public relations, television, politics, and any other vocation that requires a good understanding of self and an ability to work effectively with others.

The self-confrontation techniques refined in this investigation could conceivably enhance the training of medical students by helping them improve both their technical skills as well as their ability to interact therapeutically with patients. It could also be used to train others in the medical area including nurses and hospital administrators.

The implications of VTR self-confrontation for management training have been recognized by many industries. Often, however, the approach is used in a haphazard and undisciplined way. The present investigation offers a systematic approach to VTR self-confrontation and provides some insight into its appropriateness for various purposes such as personnel interviewing, appraisals, and the like.

VTR self-confrontation might be of value in training the disadvantaged. A major goal of many job training, youth opportunity, and similar programs is to help the trainees develop more self confidence, a more positive self-image, interpersonal awareness, and other skills that could possibly be developed through VTR self-confrontation.

Perhaps as important as the insights the present study provides into the potential worth of VTR self-confrontation as a training method, are the theoretical implications of the study. Some of these theoretical matters are discussed in the next section.

Theoretical Implications.

Two theories or conceptual systems, had a pervasive influence on the present study; instrumental or operant conditioning and feedback theory.

Operant methods were part of the therapeutic approach taught to the clinicians in training who served as subjects. In addition, the experimental subjects employed a category system based on operant principles to analyze the videotapes of their therapy and double confrontation sessions. Operant theory appeared quite acceptable to the subjects as a way of approaching therapy and as an analytical scheme. The system was easy for the subjects to learn. After a few hours of training they could use the system to categorize videotape with a high degree of reliabliity. They could also talk with facility about therapy in operant terms. More important, the theoretical scheme enabled the subjects to respond in a systematic way to self-confrontation. They were able to categorize - to react overtly - to every behavior they observed on the tape. The results of the present study suggest that this aspect of VTR self-confrontation procedure, the requirement that the subjects learn a theoretical system and that they apply it while observing themselves, was one of the most important aspects of the entire methodology.

Had the experimental subjects in the present study been asked merely to observe themselves - without receiving instructions in operant principles and without the requirement that they use a category system to classify their behavior - it is conceivable that they would have in many cases focused primarily on the more superficial aspects of their behavior such as gestures or facial expressions and that fewer differences would have been found between the experimental and control groups. The finding of McCroskey and Lashbrook (1968) that VTR self-confrontation was more effective

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in training public speakers when it was accompanied by student and instructor criticism and discussion, indirectly supports this conclusion. More direct support is provided by Dieger, Crane, and Brown (1968) in their study of the use of VTR self-confrontation in a general speech course. Dieger, et. al. concluded that self-confrontation might have had a stronger impact on the self-concept of students if the subjects could have participated in some form of self-analysis during the experience instead of merely viewing themselves passively.

From an operant point of view, it could be said that the present investigation strongly suggested that VTR self-confrontation can be used as a reinforcement technique. Through VTR self-confrontation, subjects in the present study were conditioned to decrease the number of negative responses they provided their clients. Additional research is needed to determine the strength of VTR self-confrontation as a positive and negative reinforcer and to discover the most effective VTR reinforcement procedures.

Although the number of negative responses the subjects produced during a therapy session was influenced by self-confrontation, the number of positive responses was not. Apparently, the positive reinforcement individuals exhibit in interpersonal situations is fairly stable. At least it is more difficult to change than negative reinforcement. It would be interesting to determine if the amount of positive reinforcement individuals characteristically provide others is correlated with personality factors and whether or not a more intense or elaborate VTR experience would ultimately cause a change in a subject's positive reinforcement pattern.

A major advantage of a behavioral emphasis in research is the fact that reinforcement data can be easily quantified and analyzed statistically. An operant approach to VTR self-confrontation allows subjects and investigators to make comparisons readily between sessions and to recognize and describe changes over time. However, those things that are easily quantifiable may not necessarily be the most meaningful and there is a danger of sacrificing relevancy for the sake of "rigor". An attempt was made to deal with this problem in the present investigation by combining behavioral data with information obtained through questionnaires, interviews, and in a number of other ways.

Behavioral approaches to therapy imply a mechanistic attitude toward people and their difficulties. They seem, in a sense, to deny some of the basic values like love, empathy, and trust that are such an important part of any helping relationship. The investigators were aware of this problem and attempted in their contacts with the subjects to compensate for the operant emphasis of the research by stressing the importance of understanding, warmth, and other significant characteristics of an effective therapeutic relationship.

All self-governing systems require feedback. Feedback is a basic characteristic of all social and biological organisms. It is recognized as essential as a part of the learning process. Many educational procedures such as tests, report cards, the grading of papers, and the like are used, to some extent at least, to provide students with information or feedback about how they are doing. VTR self-confrontation has the advantage over most other feedback methods of being highly accurate and thorough. It can provide an individual with a rather complete and highly objective replay of his past behavior. Theoretically, such feedback should facilitate the learning process by enabling the individual to modify his future behavior on the basis of his past performance, and his future behavior can also be videotape recorded for feedback purposes. By demonstrating the positive effects of VTR self-confrontation, the present investigation certainly supports the validity of feedback theory and emphasizes its important role in the learning process.

While not overly dramatic in its effects, double confrontation had a measureable and distinctive impact on the subjects. In the single confrontation condition, subjects viewed their performance as clinicians. In the double concondition they viewed themselves viewing their clinical performance. Since the findings indicate that learning occurred during single confrontation, it could be said that double confrontation subjects watched themselves learning. It is conceivable, then, that double confrontation provides an opportunity for individuals to learn about how they learn. The implications of such a feedback process are many. Additional research into the effects of double confrontation should be conducted.

The videotape recorder is a relatively new piece of educational hardware. In recent years it has become an important part of the educational scene. It is being used at a number of institutions in the training of teachers, counselors, clinical psychologists, medical doctors, lawyers, speech therapists and public speakers. It is also employed extensively by industry for in-service training purposes. However, very little of a scientific nature is known about alternative ways to use the videotape recorder or its relative effectiveness. The present study represents one of the few systematic attempts to develop a specific VTR methodology for self-confrontation and to test its effectiveness. The findings are encouraging. They suggest that VTR self-confrontation is a practical and feasible educational methodology and that its effects can be distinguished from more traditional educational approaches. The study lends further support to the age old dictum that true learning begins with self-knowledge and understanding.

APPENDIXES

Appendix A	Chicago Q-Sort
Appendix B	Denver Q-Sort
Appendix C	Self-Perception Questionnaire
Appendix D	Confrontation Rating Scale
Appendix E	Self-Evaluation of Clinical Competence Rating Scale
Appendix F	A Set of Learning Theory Categories for Analyzing the Speech Therapy Situation A Manual for Scoring Video and Audio Tapes

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CHICAGO Q-SORT ITEMS

Appendix A

1. I feel uncomfortable while talking with someone
2. I put on a false front
3. I am a competitive person
4. I make strong demands on myself
5. I often kick myself for the things I do
6. I often feel humiliated
7. I doubt my sexual powers
8. I am much like the opposite sex
9. I have a warm emotional relationship with others
10. I am an aloof reserved person
11. I am responsible for my troubles
12. I am a responsible person
13. I have a feeling of hopelessness
14. I live largely by other peoples values and standards
15. I can accept most social values and standards
16. I have few values and standards of my own
17. I have a hard time controlling my sexual desires
18. It is difficult to control my aggression
19. Self control is no problem to me
20. I am often down in the dumps
21. I am really self-centered
22. I usually like people
23. I express my emotions freely
24. Usually in a mob of people I feel a little bit alone
25. I want to give up trying to cope with the world
26. I can live comfortably with the people around me
27. My hardest battles are with myself
28. I tend to be on my guard with people who appear more friendly than expected
29. I am optimistic
30. I am just sort of stubborn
31. I am critical of people
32. I usually feel driven
33. I am liked by most people who know me
34. I have an underlying feeling that I am not contributing enough to life
35. I am sexually attractive
36. I feel helpless
37. I can usually make up my mind and stick to it
38. My decisions are not my own
39. I often feel guilty
40. I am a hostile person
41. I am contented
42. I am disorganized
43. I feel apathetic
44. I am poised
45. I just have to drive myself to get things done
46. I often feel resentful
47. I am impulsive
48. It is important for me to know how I seem to others
49. I don't trust my emotions
50. It is pretty tough to be me
51. I am a rational person
52. I have the feeling I am just not facing things
53. I am tolerant
54. I try not to think about my problems
55. I have an attractive personality

CHICAGO Q-SORT ITEMS

Continued

56. I am shy
57. I need somebody else to push me through on things
58. I feel inferior
59. I am no one. Nothing really seems to be me
60. I am afraid of what other people think about me
61. I am ambitious
62. I despise myself
63. I have initiative
64. I shrink from facing a crisis or difficulty
65. I just don't respect myself
66. I am a dominant person
67. I take a positive attitude toward myself
68. I am assertive
69. I am afraid of a full-fledged disagreement with a person
70. I can't seem to make up my mind one way or another
71. I am confused
72. I am satisfied with myself
73. I am a failure
74. I am likeable
75. My personality is attractive to the opposite sex
76. I am afraid of sex
77. I have a horror of failing in anything I want to accomplish
78. I feel relaxed and nothing really bothers me
79. I am a hard worker
80. I feel emotionally mature
81. I am naturally nervous
82. I really am disturbed
83. All you have to do is just insist with me and I give in
84. I feel insecure within myself
85. I have to protect myself with excuses, with rationalizing
86. I am a submissive person
87. I am intelligent
88. I feel superior
89. I feel hopeless
90. I am self-reliant
91. I often feel aggressive
92. I am inhibited
93. I am different from others
94. I am unreliable
95. I understand myself
96. I am a good mixer
97. I feel adequate
98. I am worthless
99. I dislike my own sexuality
100. I am not accomplishing

DENVER Q-SORT ITEMS

1. Have a Masters Degree in Speech Pathology
2. Have at least five years professional experience
3. Be able to relate well with others
4. Have a sincere regard for the handicapped
5. Have a comprehensive background in learning theory
6. Be mature
7. Have a stable personality
8. Have an extensive background in psychoanalytic theory
9. Can train clients to become more sensitive to their own needs
10. Has a comprehensive background in human anatomy and neurology
11. Can work well with both organic and functionally based problems
12. Can relate structure to function
13. Can understand the articles in JSHR
14. Has a working knowledge in audiology
15. Can work well with all age ranges
16. Uses a multisensory approach to therapy
17. Should be a specialist within his field
18. Promotes public awareness of the value and needs for speech therapy
19. Knows the agencies available for aid in client job placement
20. Understands human psychological reactions to illness
21. Can converse intelligently with medical personnel
22. Has a neat and clean personal appearance
23. Establish realistic goals for the client
24. Be able to plan effective rehabilitation procedures
25. Have a good background in psychology
26. Be a good diagnostician
27. Be able to work well with others
28. Reads professional journals
29. Should have a high tolerance for ambiguity
30. Should stick to speech therapy and not personal problems
31. Should not be easily embarrassed
32. Should make referrals
33. Should consult with colleagues when uncertain
34. Works independently without supervision
35. Should not look upon himself as a psychotherapist
36. Is a member of ASHA
37. Is flexible and openminded
38. Expresses himself well
39. Is well adjusted
40. Understands himself
41. Uses a tape recorder as therapy
42. Is task oriented
43. Knows the value of negative reinforcement
44. Rewards the clients for good speech production
45. Is certified by the ASHA
46. Enjoys doing therapy
47. Shows empathy
48. Is professional in his dealing with others
49. Is sensitive to the needs of others
50. Gets along well with others
51. Accepts objective criticism
52. Leaves diagnosis to the physician
53. Considers other things more important than personal appearance
54. Considers ability more important than formal academic achievement
55. Allows client to establish his own goals

Appendix B

DENVER Q-SORT ITEMS
Continued

56. Collaborates with client in planning rehabilitation procedures
57. Stresses therapy, not diagnosis
58. Maintains an appropriate professional relationship with his colleagues
59. Avoids becoming too theoretical about his discipline
60. Has a low tolerance for ambiguity
61. Becomes involved with the personal problems of his clients
62. Tries to hide his embarrassments
63. Avoids making referrals
64. Dislikes being supervised
65. Feels little or no need to consult with colleagues
66. Requires supervision
67. Is qualified as a psychotherapist
68. Leaves administration to the administrator
69. Avoids involvement with professional organizations
70. Does not feel obligated to have perfect speech himself
71. Believes that actions are more important than verbal facility
72. May have personal problems
73. Is not too introspective
74. Fells no need for special electronic equipment
75. Is person oriented
76. Uses negative as well as positive reinforcement
77. Feels that ASHA certification is an irrelevant requirement
78. Maintains social distance
79. Enjoys seeing the results of therapy
80. Avoids impulsive responses like laughing
81. Is never overly professional
82. Is not overly concerned with the needs of others
83. Is not too sociable
84. Is youthful
85. Has a volatile personality
86. Is more concerned with practicality than with theory
87. Avoids sentamentality
88. Tries to avoid being evaluated by others
89. Believes that it is ability that counts, not professional experience
90. Sees little relationship between amount of study and clinical skill.
91. Believes that a clinician does not need to know psychoanalytic theory
92. Has no business doing anything about a client's sensitivity to his own needs
93. Is not concerned with fees
94. Does not dwell on ethical questions
95. Does not use tokens or similar items to reward desirable speech behavior
96. Feels a knowledge of anatomy and physiology is of little practical value
97. Prefers to work with organically based problems
98. Is concerned less with structure than with function
99. Is more interested in application than theory
100. Needs little background in audiology
101. Works more effectively with children than with adults
102. Uses a unisensory approach to therapy
103. Is not concerned with educating the public about the value of speech therapy
104. Works with all types of speech problems
105. Need not be a good teacher
106. Does not become emotionally involved with the welfare of his patients
107. Leaves job placement to others

DENVER Q-SORT ITEMS

Continued

108. Feels little need for a background in child psychology
109. Is not concerned about the difference between apraxia, agnosia and aphasia
110. Feels little need to have a background in medical terminology
111. Understands the significance of social reinforcement
112. Understands the techniques and issues of verbal conditioning
113. Understands the essentials of secondary reinforcement
114. Is familiar with schedules of reinforcement
115. Is familiar with behavior modification terminology
116. Is familiar with behavior modification techniques
117. Understands behavior modification theories and methods to self-confrontation
118. Appreciates the significance of "base rates"
119. Knows the significance of immediate reinforcement
120. Understands the nature and the effects of punishment

APPENDIX C

SELF-PERCEPTION QUESTIONNAIRE

Think of how you appeared and sounded on the videotape you have seen. Then, rate yourself on the scales below. Try not to rate yourself on the basis of your impression of yourself from past experience, instead, try to base your rating of yourself on what you saw on the videotape. Please circle the number which you feel is closest to your judgment or feeling.

Pleasant	8	7	6	5	4	3	2	1	Unpleasant
Friendly	8	7	6	5	4	3	2	1	Unfriendly
Rejecting	8	7	6	5	4	3	2	1	Accepting
Helpful	8	7	6	5	4	3	2	1	Frustrating
Unenthusiastic	8	7	6	5	4	3	2	1	Enthusiastic
Tense	8	7	6	5	4	3	2	1	Relaxed
Distant	8	7	6	5	4	3	2	1	Close
Cold	8	7	6	5	4	3	2	1	Warm
Cooperative	8	7	6	5	4	3	2	1	Uncooperative
Supportive	8	7	6	5	4	3	2	1	Hostile
Boring	8	7	6	5	4	3	2	1	Interesting
Quarrelsome	8	7	6	5	4	3	2	1	Harmonious
Self-Assured	8	7	6	5	4	3	2	1	Hesitant
Efficient	8	7	6	5	4	3	2	1	Inefficient
Gloomy	8	7	6	5	4	3	2	1	Cheerful
Open	8	7	6	5	4	3	2	1	Guarded

APPENDIX D

SELF-CONFRONTATION QUESTIONNAIRE

Based on the tape of yourself you have just seen, please answer the questions below. Circle the number which you feel comes closest to your feelings, opinion, or evaluation.

How do you feel about this experience? How valuable was this experience as an aid in learning the practical aspects of therspy?

1	2	3	4	5	6	7	8	9
Quite Valuable		Fairly Valuable		Neutral		Fairly Value-less		Quite Value-less

To what extent did you look and sound like yourself on the videotape?

1	2	3	4	5	6	7	8	9
Exactly as I imagined I would		Somewhat like me		Neutral		Not very much like me		Not at all as I imagined I would

How effective were you in getting the client to respond or do what you want?

1	2	3	4	5	6	7	8	9
Quite Effective		Fairly Effective		Neutral		Fairly Ineffective		Quite Ineffective

How effective were you in describing, explaining, demonstrating, or modelling behavior to the client??

1	2	3	4	5	6	7	8	9
Quite Effective		Fairly Effective		Neutral		Fairly Ineffective		Quite Ineffective

How effective were you in rewarding the client for proper behavior?

1	2	3	4	5	6	7	8	9
Quite Effective		Fairly Effective		Neutral		Fairly Ineffective		Quite Ineffective

How effective were you in negatively reinforcing the incorrect client behavior?

1	2	3	4	5	6	7	8	9
Quite Effective		Fairly Effective		Neutral		Fairly Ineffective		Quite Ineffective

To what degree were you open, warm, and friendly as opposed to cold, distant, and withdrawn with the client?

1	2	3	4	5	6	7	8	9
Quite warm and friendly		Fairly warm and friendly		Neutral		Fairly cold and distant		Quite cold and distant

To what degree were you directive and dominant as opposed to permissive and nondirective?

1	2	3	4	5	6	7	8	9
Quite Dominant		Fairly Dominant		Neutral		Fairly Permissive		Quite Permissive

Now rate the session from a clinical standpoint on the following items:

The materials used in therapy were:

1	2	3	4	5	6	7	8	9
Highly useful and appropriate		Fairly useful		Neutral		Fairly useless		Quite useless and inappropriate

The room environment, including the table, blackboard, lighting, noise level, and so on, was:

9	8	7	6	5	4	3	2	1
Highly inappropriate and distracting		Inadequate		Neutral		Adequate		Highly appropriate and inviting

The techniques used in therapy were:

1	2	3	4	5	6	7	8	9
Highly effective and useful to client		Fairly effective		Neutral		Fairly ineffective		Highly ineffective and confusing to client

The client's overall performance and progress showed:

1	2	3	4	5	6	7	8	9
Great improvement over previous sessions		Some improvement		Neutral		Slight Regression		Regression to previous levels

The level of fulfillment of therapy goals was

9	8	7	6	5	4	3	2	1
None, no goals fulfilled		Minimal		Partial fulfillment		Fairly good, most goals achieved		Complete, all goals fulfilled

My performance, overall, as a clinician was:

9	8	7	6	5	4	3	2	1
Highly ineffective, possibly negative benefit to client		Somewhat ineffective		Neutral		Somewhat effective		Highly effective and of great benefit to client

APPENDIX D

DOUBLE SELF-CONFRONTATION QUESTIONNAIRE

You have just watched a tape of yourself as you viewed a therapy session. Please answer the questions below based on this viewing:

How do you feel about this experience? How valuable was this experience as an aid to learning about yourself as a therapist?

1	2	3	4	5	6	7	8	9
Quite valuable		Fairly valuable		Neutral		Fairly value-less		Quite value-less

To what extent were you open, flexible, and honest as opposed to defensive, closed and anxious during the self-confrontation?

1	2	3	4	5	6	7	8	9
Quite open		Fairly open		Neutral		Fairly defensive		Quite defensive

To what extent were you involved in the self-confrontation experience as opposed to uninvolved or withdrawn?

1	2	3	4	5	6	7	8	9
Quite involved		Fairly involved		Neutral		Fairly withdrawn		Quite withdrawn

To what extent did you look like and sound like yourself on the tape?

1	2	3	4	5	6	7	8	9
Extremely different from what I expected		Somewhat different from what I expected		Neutral		Pretty much as I expected		Exactly as I expected

APPENDIX E

NAME OF THERAPIST______________________________ SESSION NO.________________

(Place a check mark any place along each continuum)

BEHAVIOR OF THERAPIST

Flexible	1	2	3	4	5	6	7	8	9	10	Rigid
Low spontaneity	1	2	3	4	5	6	7	8	9	10	High Spontaneity
Low creativity	1	2	3	4	5	6	7	8	9	10	High creativity
Client-centered	1	2	3	4	5	6	7	8	9	10	Task-centered
Self-oriented	1	2	3	4	5	6	7	8	9	10	Client-oriented
Disinterested & impersonal	1	2	3	4	5	6	7	8	9	10	Warm and supportive
Communicated well with client	1	2	3	4	5	6	7	8	9	10	Communicated poorly
Fluent	1	2	3	4	5	6	7	8	9	10	Non-Fluent
Dominant	1	2	3	4	5	6	7	8	9	10	Submissive
Well prepared	1	2	3	4	5	6	7	8	9	10	Poorly prepared
Secure	1	2	3	4	5	6	7	8	9	10	Insecure
Confident	1	2	3	4	5	6	7	8	9	10	Lacked confidence
Likes client	1	2	3	4	5	6	7	8	9	10	Dislikes client
Comfortable	1	2	3	4	5	6	7	8	9	10	Uncomfortable
Systematic	1	2	3	4	5	6	7	8	9	10	Unsystematic
Task oriented	1	2	3	4	5	6	7	8	9	10	Process oriented

SESSION AS A WHOLE

Effective	1	2	3	4	5	6	7	8	9	10	Ineffective
Tense	1	2	3	4	5	6	7	8	9	10	Relaxed
Task oriented	1	2	3	4	5	6	7	8	9	10	Process oriented

APPENDIX F

A SET OF LEARNING THEORY CATEGORIES FOR ANALYZING THE SPEECH THERAPY SITUATION

A Manual for Scoring Video and Audio Tapes

Speech and Hearing Center
University of Denver
Denver, Colorado

Ernest L. Stech
September, 1968

INTRODUCTION:

Any interaction between two people can be analyzed by scoring their behavior or putting the acts they exhibit into categories. The system presented here involves the use of discrete categories into which speech therapist and client activities can be classified.

There are as many ways of looking at the interaction between people as there are theories, training methods, and teachers to invent them. One very useful way of looking at human behavior is through the eyes of the learning theory psychologist, and this category system concentrates on a learning theory method of analysis. This means that interest is concentrated on how the therapist rewards or punishes the client when he either does the right thing or the wrong thing.

For example, when a child produces a sound for the first time in a therapy situation, the clinician usually responds with "Good!" or "That's right!" These responses by the therapist are positive and rewarding to the child. The psychologist would predict that the child would continue to exhibit any behavior which is suitably rewarded. Similarly, the child will eliminate any behavior which is punished with negative comments.

An analysis using the approach just outlined depends on psychological learning theory concepts, but it should not be confused with so-called "behavior change therapy" methods. Some people have demonstrated that the deliberate use of rewards and punishments can be powerful tools in shaping and modifying another person's behavior. Changes in psychotic and severely disturbed patients are often dramatic using such methods. However, there is no attempt here to induce you to adopt such a mode of therapy. As far as the learning experience you go through is concerned, you are free to pick and choose the method which best fits you. You may develop your own "style" of therapy. All the videotape scoring is intended to do is to give you some insight into how you deal with clients from the standpoint of learning theory. We will be looking at just one aspect of therapy using the categories, and there is much more to being a successful clinician than just knowing when to reward and when to withhold a reward from a client.

The purposes of the learning theory category scoring can be listed for you now, and you may want to review them at a later date when you have had a chance to score some of your own therapy sessions:

(1) By scoring the videotapes, you will be able to see how a client responds to your directions, suggestion, rewards, and punishments.

(2) You will be able to see how you give directions and suggestions and how you reward or punish.

(3) You will be able to see the sequences of activity in segments of a therapy session and you will be able to see the differences between the segments.

(4) You will be able to see the pattern of the whole therapy session as a unit rather than as a series of disjointed and unrelated acts.

DESCRIPTION OF THE CATEGORY SYSTEM

For the purpose of looking at therapy sessions from a learning theory standpoint, the process of therapy is seen as consisting of three basic steps:

(1) Attempts by the therapist to get the client to produce a sound, a word, a fluency level, or whatever else is required to improve or correct the client's behavior; this we call "attempts at eliciting client behavior."

(2) Client production of a sound, word, and so on as directed or suggested by the therapist; this we call "emitted client behavior."

(3) Reward or punishment of the client, depending on whether the emitted behavior was correct or incorrect in the judgment of the therapist; this we call the "reinforcement of client behavior."

These three steps are basic to almost any educational process. In elementary grades, the teacher presents a new area or subject matter to the students through talk, books, pictures, motion pictures, etc. The students practice and rehearse the behaviors they think the teacher wants them to learn. The teacher then gives a quiz or test or some homework, and she grades the performance. High grades are positive reinforcement, and low grades are negative reinforcements. Notice that the teacher usually requires some form of overt and observable behavior from the student or she doesn't have anything to reinforce.

However, there is another step in any sophisticated learning process:

(4) Client self-reward or self-punishment after learning the performance criterion.

This is an important step if the educational process is ever to become self-organizing and semi-automatic. In school, pupils are taught how to find out if their answers are right or wrong by looking at answer sheets in the back of the book or using some other method.

In addition to the four steps outlined above, another factor has to be taken into account in looking at a learning situation. The teacher and the student or the therapist and client must establish a relationship which allows learning to take place. This is discussed in more detail later in this manual, and it may become evident when you watch tapes of yourself confronting a client. Somehow the client must believe that you can help him and you must believe that he is willing to be helped. This is the minimum foundation from which therapy starts.

The overall category system is presented in Figure 1 on the next page. It will pay to review the system on an overall basis before getting into the details of scoring.

You will notice that the first five categories relate to therapist activities and the last five relate to client behaviors. Categories 1 and 2 dover the two main ways of getting a client to say or do what you want him to do in order to get the therapy underway. Categories 3 and 4 represent positive and negative reinforcements, the technical terms for reward and punishment, which you provide the client after he has responded. Category 5 represents activities in which you talk to the client socially or arrange materials or equipment.

The client categories are equally simple. Categories 6 and 7 cover client correct and incorrect responses, respectively, In Category 8, we have a place to put inappropriate client responses (which will be explained later), and client's social conversation with you. Categories 9 and 10 represent client positive and negative self-reinforcement.

You will find that the things which go on in the videotapes are fairly easy to stick into categories, particularly after you have had some practice.

Category Number	Title	Brief Description
1	Describe, explain	Therapist elicits client behavior by description, explanation or by direct control
2	Model	Therapist elicits client behavior by direct and conscious modelling
3	Positive reinforcement	Therapist positively reinforces the client, either verbally or non-verbally
4	Negative reinforcement	Therapist negatively reinforces the client, either verbally of non-verbally
5	Neutral and Social	Therapist engages in activities which do not require client response or which deal with session goals
6	Correct responses	Client makes a response which is correct in terms of the therapy goals
7	Incorrect responses	Client makes a response which is incorrect in terms of the therapy goals
8	Inappropriate and Social	Client makes a response which is not appropriate in terms of the therapist's goals or engages in social conversation not related to the therapy goals.
9	Positive self-reinforcement	Client positively reinforces himself by verbally or nonverbally indicating that he considers his response correct
10	Negative self-reinforcement	Client negatively reinforces himself by verbally or nonverbally indicating that he considers his response incorrect

DISCUSSION OF CATEGORIES 1 AND 2:

Category 1	Therapist describes or explains a desired speech behavior; therapist structures the therapy session; therapist requests client to perform or act; therapist makes an attempt to elicit speech behavior from the client
Category 2	Therapist deliberately models the desired speech behavior usually a specific articulatory, phonation, or fluency level, but this may include providing a word to the client or similarly helping him to make a correct response

There are a large number of ways you can get a client to emit the kind of behavior you want. With children there are games, toys, and books. Adults can be asked directly to say a certain kind of word or they can be asked to read a passage from a magazine or book. Methods for eliciting behavior are limited only by the ingenuity of the clinician and a major part of your training in clinical techniques is devoted to the use of appropriate eliciting materials and devices. All of the behavior eliciting approaches described in this paragraph would be scored in Category 1.

A second way of eliciting behavior is to provide a model and have the client attempt to match the model, For the purposes of this scoring system, modelling consists of the clinician making the sound, pronouncing the word, giving the desired pitch level, and so on. You should be aware of the fact that you are always modelling to some extent, For a stutterer, you provide a model of fluency in your standard, everyday speech. For a dysphonic patient, you provide a model of voice production. For a child, you may provide a model of fluency, vocabulary, pronounciation, diction, and many other facets of acceptable speech. However, in scoring, Category 2 should be used only when the modelling is a deliberate and conscious production of the speech behavior desired of the client and made in an effort to aid him in producing the same behavior.

Typical examples of Category 1 eliciting behaviors are:

"Would you read this paragraph for me?"
"What kind of animal is this?" (showing a picture)
"Where is the elephant's ear?"
"Try to talk only in short sentences."

Typical examples of Category 2 modelling are:

"Okay, try to say 'ball apple'"
"Watch me when I say 'rabbit'"
"Listen to the difference in my voice when I tighten the muscles in my throat and neck."

SPECIAL NOTE
ON CATEGORY 2

At times, there are activities in therapy sessions which do not have an obvious place in the category system. In such cases, we establish arbitrary conventions of scoring. One such case occurs when you record a client's behavior on an audio tape recorder and immediately play the tape back to the client. You can have the client listen and then reinforce the recorded behavior or you can try to get him to reinforce himself. The playback of the audio tape should be classified in Category 2 as a behavior model. However, use an X to indicate a tape recorded model of the client's own behavior. You will have time to break the rapid flow of scoring to put in an X while the tape is running. Put in an X for each separate run of the recorder and don't worry about how many client responses are recorded.

DISCUSSION OF CATEGORIES 3 AND 4

Category 3	Therapist positively reinforces the client; the reinforcement may be verbal or it may consist of a nod, smile, or even touching the client; the therapist's behavior should be obviously rewarding to the client to be scored as a positive reinforcment.
Category 4	Therapist negatively reinforces the client; the reinforcement may be verbal or it may consist of a shake of the head or a frown; the therapist's behavior should be obviously unpleasant or punishing to the client to be scored as a negative reinforcement.

In reinforcing a client, each therapist uses certain standard rewards and punishments and some which are unique and specific. There is no standard set of words or expression, and how you reinforce a client will depend upon the kind of person you are. The important point is that your reinforcements should be consistent, honest, and appropriate. Inconsistent reward or punishment leaves the client confused about the standard of behavior you expect. Dishonest reinforcements are obvious to all but the youngest children, as for example, giving excessive praise for a series of "good tries" when the client knows he is failing to provide the right kind of output. Appropriate reinforcements come at the right time and place in the therapy session. For example, it is not necessary to interrupt a client to give a reinforcement verbally. A smile or nod will do the same thing.

Positive reinforcements include such words and phrases as "Good," "That's right," "Uh huh," " Yes," and so on. Nonverbal reinforcers consist of nods, touching, smiling patting, giving candy, or even giving a child a bead to put on a string. However, one aspect of positive reinforcement is important. Adults give one another a steady stream of positive reinforcements during normal social conversation, apparently signalling that the other person should keep talking and to indicate interest in what is being said. Sometimes this carries over into the therapy situation, and it is not unusual to find clinician's reinforcing incorrect behaviors in this way.

Negative reinforcers include "No," "That's wrong," "Try that again," shaking the head, frowning, and so on.These kinds of reinforcers are much rarer than positive reinforcers. Some people find it very difficult to criticize or negatively reinforce another person. However, the client cannot begin to perceive the difference between correct and incorrect behaviors without guidance from the clinician. It is easy enough to reward correct behavior, but negatively reinforcing incorrect behaviors may be as important

DISCUSSION OF CATEGORY 5

Category 5	Therapist engages in activity not requiring client responses such as reading from a book, arranging materials, setting up a tape recorder; therapist engages in social conversation that is not directly concerned with the goals of the session.

In effect, this category is to be used as a "wastebasket" during scoring. When a particular act cannot be fit into one of the other categories, it should be placed in Category 5. However, past experience in scoring videotapes of therapy sessions has shown that most therapists will exhibit two kinds of activity which should be scored in this category. The first type of behavior involves the mechanical details of the therapy session; things like setting up the tape recorder or arranging the blackboard or erasing it. The second type of behavior involves social conversation between the therapist and client, which may range from discussing the weather to examining the guts of the tape recorder. These behaviors are often quite important in establish- a relationship with the client.

The problem of the client-clinician relationship is an important one for several reasons. Perhaps most important is the question of reinforcement effectiveness. You have two modes of control over the client. The first involves your status and prestige as the therapist. The client will tend to think of you as having a formula or method for solving his problem; and his attitude makes you an important and knowledgeable person in his eyes. Therefore, when you say something is right or wrong or good or bad, he will believe you. The second mode of control is through friendship and acceptance. People accept reinforcements from persons whom they like and want to like them. If the client does not like you or if he does not respect you, your chances of being able to reward or punish him are slight.

This may sound like a rather cold and hard-hearted view of human life. However, you must remember that your effectiveness depends, in large measure on your ability to be authoritative and friendly, but to do so honestly and openly. Clients will detect a false front of "expertize" or a phony kind of friendliness. You cannot manipulate a client very long without being found out, but you can legitimately control a client as long as you are competent to help him and concerned about him.

DISCUSSION OF CATEGORIES 6 AND 7

Category 6	Client responds correctly to a therapist description, explanation, request, or model; the correctness of the response is to be judged in terms of the therapist's goals for the session.
Category 7	Client responds incorrectly to a therapist description explanation, request, or model; the correctness of the response is to be judged in terms of the therapist's goals for the session.

The classification of client responses into correct and incorrect is important from two aspects. First, it is important to note the frequency of correct and incorrect responses for different kinds of clients. Stutterers and voice clients frequently display nothing but incorrect behaviors over long segments of a therapy session. On the other hand, some children who have almost overcome an articulation problem will exhibit high frequencies of correct responses. Second, only by sorting out correct and incorrect responses can you evaluate the effectiveness of your eliciting and reinforcing attempts. For example, it is helpful if you can elicit correct responses early in a therapy session so that the client can feel successful. The effectiveness of your therapeutic method and the materials you use to stimulate the client can be evaluated by noting the frequency of correct behaviors. Another example is in evaluating reinforcement effectiveness. A few negative reinforcements should result in the elimination of an incorrect response, but too many negative reinforcements can make the client avoid making the response at all. You will be able to see this kind of process in using the category system.

The real problem in scoring client responses will be the decision on what constitutes a correct and an incorrect response. As noted in the category descriptions above, the decision has to be made on the basis of the therapist's goals for the client in the session being scored. Correct behavior may not be perfect or even "normally acceptable speech" in certain circumstances. If you wait around for a perfect behavior, the client may never get a positive reinforcement. On the other hand, clearly incorrect behaviors - by the therapist's standard - should not be positively reinforced and may have to be negatively reinforced. And, as noted earlier, it is most important that the criteria for performance not shift randomly during a session. The same behavior should consistently receive a positive or a negative reinforcment.

DISCUSSION OF CATEGORY 8

Category 8	Client responds inappropriately by dealing with irrelevant subject matter or emitting a behavior which does not follow the therapist model, request, or explanation; client engages in social conversation that is not directly concerned with the goals of the session.

This is the "wastebasket" category for client behavior, Again, most of the responses classified into this category will be of two types which are commonly seen in therapy sessions. First, the client may respond in a totally inappropriate way to the clinician's request, direction, or model. The therapist may want the child to say "rabbit," but the child starts to discuss the color of the therapist's skirt or dress. This is common, as you might expect, with with children who have a limited attention span and low motivation. However, even some adult clients will respond inappropriately on occasion. The second form of this behavior is social discussion by the client that is unrelated to the therapy goals. As noted previously in discussion Category 5, it is quite important to establish a good relationship with the client, and it may be necessary to allow some inappropriate behavior in order to allow the relationship to develop.

However, too large a number of Category 8 acts also can servd as a warning signal to the therapist. One reason for too many inappropriate responses may be ineffective use of material to elicit behavior, that is, the client cannot see what he should do and therefore responds randomly. Another reason for too many inaopropriate acts may be an effort on the part of the client to avoid the behavior the clinician is trying to elicit, which may be a sign of anxiety and tension in the client. Thus, although we call this a "wastebasket" category, it may serve as a sensitive indicator of some important factors in the therapy situation.

DISCUSSION OF CATEGORIES 9 AND 10

Category 9	Client positively reinforces his own behavior by showing pleasure, using positive verbal outout, or otherwise indicating that the emitted behavior was appropriate and correct.
Category 10	Client negatively reinforces his own behavior by showing displeasure, using negative verbal output, or otherwise indicating that the emitted behavior was incorrect or inappropriate.

Ultimately, the client must be able to recognize when he has performed correctly or incorrectly. He cannot carry a speech therapist with him for the rest of his life to reward or punish his behaviors.

Some clinicians test their client's understanding of or perception of the desired speech behavior by asking them directly whether or not the last response was good or bad. Other therapists like to have the client do the maximum amount of self-reinforcement in an effort to avoid too heavy a reliance on clinician support or to avoid client hostility or withdrawal from too much negative reinforcement by the clinician. Self-reinforcement is not a substitute for clinician reinforcement, particularly early in a session or early in the therapy process. However, it is useful when the client is able to discriminate correct from incorrect behaviors. From the standpoint of the relationship of the clinician and client, self-reinforcement is one way to give the client a sense of responsibility for his own improvement.

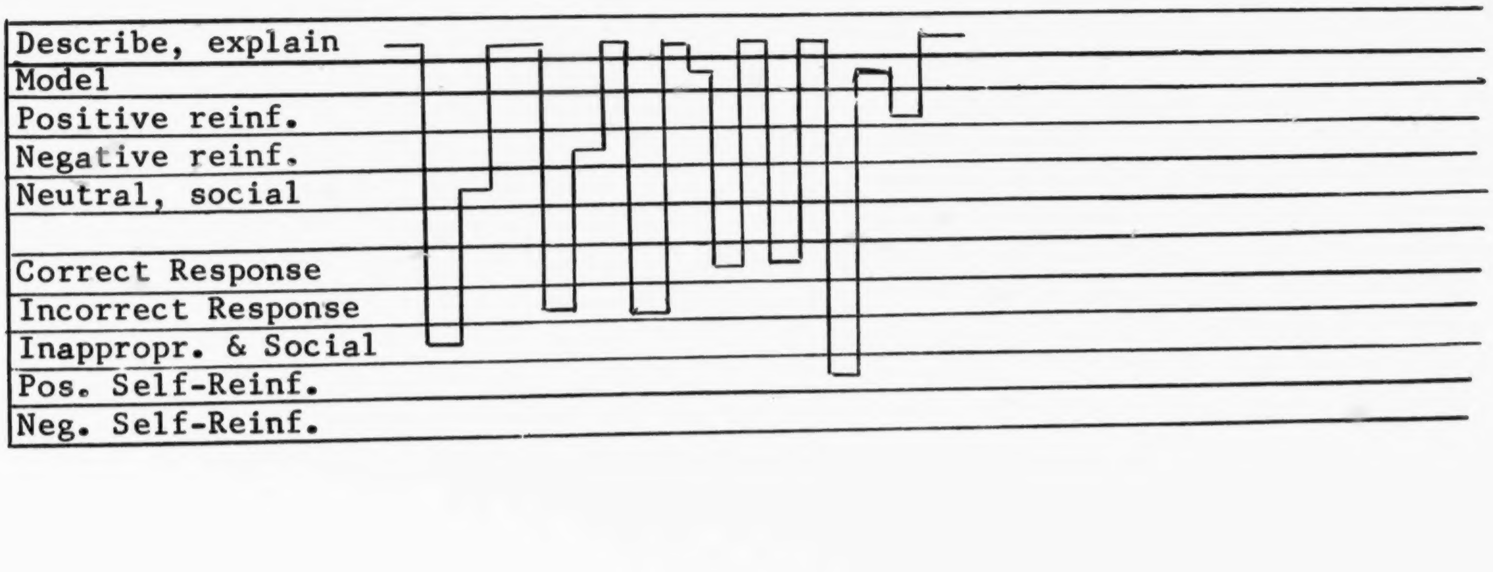
The main discrimination that has to be made in scoring is between positive self-reinforcement and other signs of happiness (or negative self-reinforcement and other signs of anxiety or unhappiness). A positive reinforcement from a therapist may make a client happy, but the happiness is a response to the reward from another person and does not constitute self-reinforcement. Similarly, a client may respond to a negative reinforcement from someone else in a negative way, but the negative response is not a negative self-reinforcement. Only such responses as "I think I did pretty well on that" or "That was what you asked me to do" constitute positive self-reinforcement. Smiling, laughter, nodding of the head, and so on, are also positive self-reinforcements if they immediately follow a correct response without any intervening therapist activity. The same general rules hold for negative self-reinforcement.

SCORING TECHNIQUE

The ten learning theory categories are intended to be used to score videotape or audiotapes of therapy session "on the fly." That is, the behaviors of the therapist and client can be scored continuously as the tapes are played. It may help to have a switch to turn off the tape machine if you get behind the scoring, but after about thirty minutes practice, most people are fast enough to stay up with all but the most repad sequences of interaction. Rapid scoring requires practice, but there is also a way of scoring the interactions on a form which permits the fastest possible recording.

A typical recording form is shown belowl It consists of ten lines, one for each category. The therapist categories, (1-5) and the client categories (6-10) are separated by an extra space to help keep the sections of the scoring form clear and obvious. The fastest and easiest way of scoring is also illustrated belowl This method consists of making a short horizontal line (about the length of a dash -) for each act and then drawing a vertical line to the next category. Some people begin scoring by placing a dot or X in each category as it occurs, but this tends to be a slower process than the continuous line method. The vertical line method of continuous drawing is faster for the same reason that script writing is faster than printing: you don't have to make as many sharp and distinct changes in the movement of your hands and fingers.

The recording form allows continuous scoring of the acts on a session as they occur in sequences. This is important because part of the value of the recording system is to allow you to analyze the sequence of acts or behaviors as they occur. It is of some interest to know how many acts of different kinds show up in one therapy session, but it is much more useful to know in what order they occur. Therefore, it is important to score the therapy session continuously and keeping the acts in the sequence in which they occur.



UNIT OF SCORING

What constitutes a unit of behavior on a videotape? The rule in this regard is fairly simple. Record every change in the type of activity or behavior that logically falls into another category.

For example, assume that the therapist begins with:

"Okay. Johnny, I want you to start by trying to say some word. Say, 'rabbit'."

This begins with a Category 1 (describe and explain) act and goes into a Category 2 (model).

Now assume that another therapist begins this way:

" Okay, Johnny, I want you to start by trying to say some words. These are easy words that we worked on last time, and I don't think you'll have any trouble with them. In fact, I think You'll have fun. Start by saying 'rabbit'."

This sequence would be scored exactly as the previous one. Even though there are three distinct sentences or thought units in the beginning, they are all Category 1 statements. So you start with a Category 1 and go to a Category 2.

In addition to recording every change in the type of activity, be sure to record every alternation between client and therapist. This is important in order to establish the full sequence of interaction. Naturally, any shift from therapist to client or vice versa is automatically a shift in category because of the way the category system is set up.

Remember that we are interested in nonverbal behavior as wlll as utterances. Therefore, each smile, frown, nod, shake, and so on, constitutes a unit to be scored in the category system.

The unit of scoring will become more obvious after you have had a chance to practice a few times.